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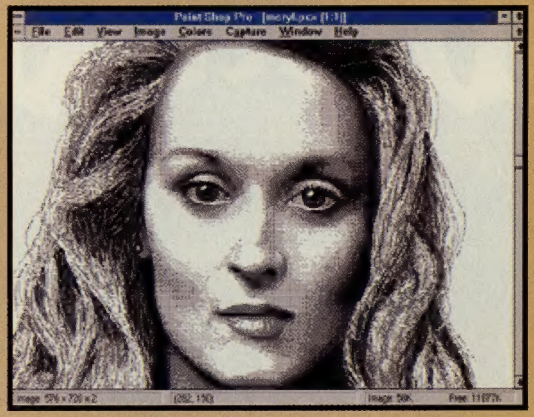

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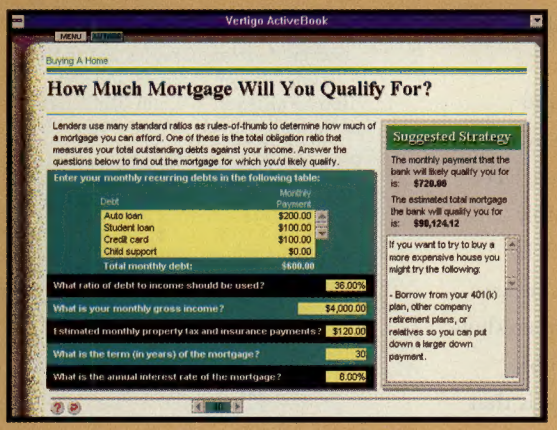

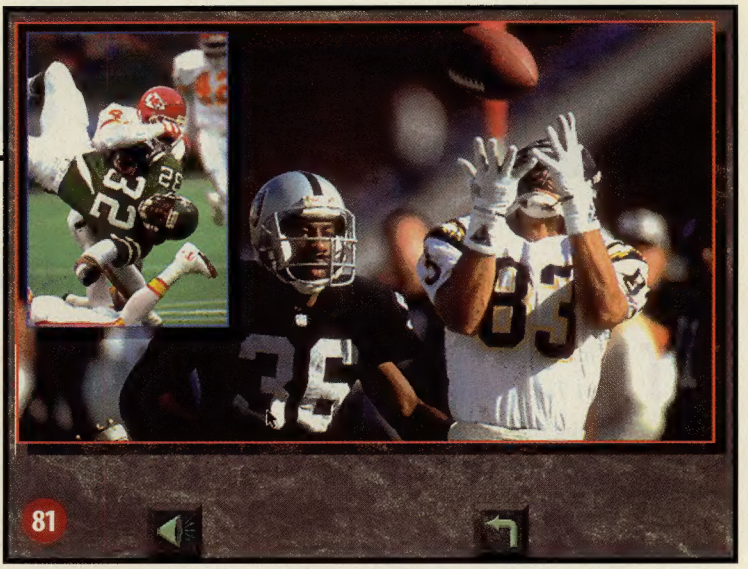

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Volume 2, Number 1
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FIRST WORD

Our Interactive Future!

This marks our fourth issue of *CD-ROM Today*, and we're in the process of changing the magazine even as you're reading. Since this publication's debut last spring, we've been making tweaks here and there, many of them by way of your suggestions. In fact, one such change that a number of readers have requested is in this issue. Each product review now receives a quality rating, with evaluations based on a variety of criteria. For an explanation of the ratings system, see page 64.

Also with each review, we're including all pertinent information about each product covered — available formats, suggested retail price, and publisher's name, address, and telephone number.

We should also note that we're running our largest number of product reviews to date — there are 42 in this issue.

New Faces

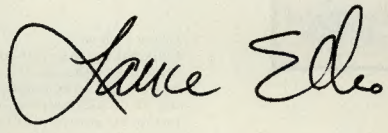
While the magazine is changing, it's also growing. And that means new staff members coming on board effective with our April/May issue. Leslie Mizell, a skilled veteran writer and editor who has been with our publishing group for more than 5 years, is joining *CD-ROM Today* as managing editor. Her editorial expertise and keen eye will be a boon to the magazine and its growth. And David A. Wade, a valuable contributing editor since the first issue, is heading south from the cooler climes of Ontario to join our staff as assistant editor. David has extensive experience in the film and recording industries, as well as with a variety of magazines. With all the plans on our drawing board, Leslie and David will be arriving none too soon.

We can't emphasize *plans* and *drawing board* enough. Here's why. First, after three more bimonthly issues, *CD-ROM Today* will become a monthly magazine. In the meantime, we'll be introducing new columns, more reviews, more graphic features, larger screen shots, and much more. Without a doubt, though, the most exciting news is that starting next issue, *CD-ROM Today* will be bundled with a CD-ROM.

The companion disc will be system ready for your PC or Mac, and will include a variety of content. We'll be featuring exclusive interactive demos of new or upcoming software titles, with video, sound, music, and lots of other goodies. Look for editorial tie-ins with the disc. We'll also include in every issue of the magazine a section devoted to what's on the companion disc.

Like the magazine, our CD-ROM product will continue to evolve, offering new features with each issue. We're excited about working with the wonderful combination of multimedia components and hundreds of megabytes of storage.

We're committed to the idea of CD-ROM as the most fascinating, dynamic vehicle for computer enthusiasts in the nineties. So join us — computing has



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Editorial Director

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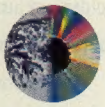

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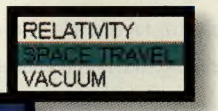

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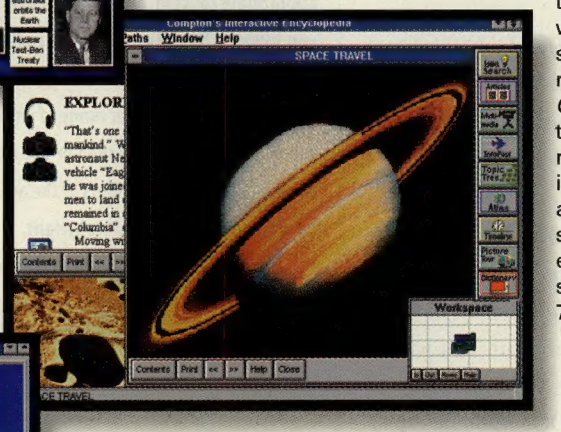

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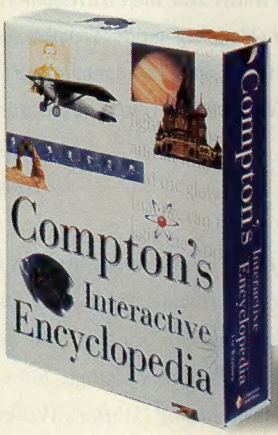

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SOUNDING BOARD

Question or comment? Write to:
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Questions of Balance

I wonder if you might have insight into the raw numbers of DOS vs. Windows vs. Mac CD-ROM drives in the market. Also, if I gather correctly, you are tilting toward the home market.

Ken T. Chang
Signal Hill, California

First, CD-ROM Today is indeed aimed at the home market, and we also have a significant number of readers in the education and home-office environments. We do lean more heavily toward PC coverage, but our effort here is to reflect the numbers that we've gleaned from our own reader research, plus results shared with us by major hardware and software companies. The consumer CD-ROM market is currently 80-85% PC (DOS/Windows) and 15-20% Macintosh. DOS vs. Windows is a less relevant issue, since all Windows users have DOS, and at least 80% of DOS users have Windows. We haven't seen any research results (as of fourth quarter, 1993) that differ from these breakdowns.

♦ ♦ ♦

Caveat's Caveat

At the end of "The Writer's Workshop" feature in your Winter issue, you note in a boxed sidebar (Caveat Scriptor) that writers need to acknowledge copyright and cite the source when borrowing language verbatim. I think this advice is misleading and should be clarified.

The comment confuses plagiarism and copyright. Plagiarism is an academic prohibition, in contrast to copyright's legal prohibition. Acknowledgement is sufficient only to avoid plagiarism. Copyrighted material, in order to be reprinted, requires the permission of the copyright holder, not just an acknowledgement of the copyright or the source.

The advice in the sidebar might have been adequate if the article had dealt only with scholarly research, for example, since certain types of reprinting, such as educational research, are considered fair use exempted from copyright restrictions. In such a case, plagiarism would indeed be the appropriate concern, amply avoided by the measures you suggest. The article and sidebar, however, despite the school-assignment hypothetical, seem to be addressed to a broader range of writers than just those in fields that enjoy the fair-use exemption. I therefore believe the readers of the article need to be warned correctly about copyright.

Ironically, there's a good article on copyright a few pages later in the same issue, but can you rely on your readers to read everything between the covers?

Adam Chu
Boston, Massachusetts

Adam Chu is an attorney.

♦ ♦ ♦

A Case of Displacement

In your Winter issue, there is a reference in "The Writer's Workshop" article to another story, "Speedy CDs: 4 Caches That Optimize Your CD-ROM Drive." I've looked, but I can't find this article.

Susan L. Oliver
Tempe, Arizona

The "Speedy CDs" feature appears in the previous (Fall) issue. We slated "The Writer's Workshop" for that issue as well, but some last-minute changes forced some editorial, including "Writer's Workshop," into the next (Winter) issue. Since the feature was already at "film" stage (i.e., ready for the printer), it was a case of out-of-sight, out-of-mind. Nevertheless, we should have remembered our internal reference and scratched it. Sorry for the confusion.

♦ ♦ ♦

XActly Compatible?

My MPC system came with a Mitsume CD-ROM drive. It claims to be Photo CD compatible, multisession-compatible, and XA-ready. Does this mean it's completely XA compatible and will run any XA software, or do I need any software or hardware upgrades?

David Smith
Windsor Locks, Connecticut

At this point, Photo CD-compatible and CD-ROM/XA-ready seem to mean the same thing. What separates CD-ROM/XA-ready from full XA is the ability to play ADPCM-compressed audio from XA discs. Very few PCs have this ability, but even fewer discs require it so far.

All you need to read images from Photo CDs with your drive is a program like Kodak's PhotoCD Access or Corel PhotoPaint (see "Getting Started With Kodak PhotoCD," a two-part feature concluding in this issue, for more on that). If XA audio catches on in PC multimedia titles, you'll need some sort of upgrade, which could take the form of either an enhanced interface card or a software driver — or an XA disc might conceivably include the software you need. We haven't seen any XA products specifically for Mitsumi drives yet, although Sony and Hitachi offer ADPCM audio interfaces for some of their units.

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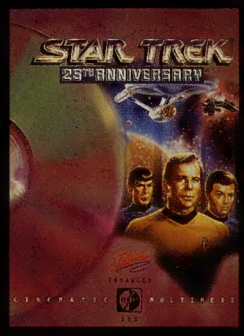

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NEWS LINE

The 'Nam ROM...from Apple

The Vietnam War is one of the most important events in modern U.S. history, and one certainly deserving more study. **Apple Computer** intends to explore the war with the help of two media sources that were there: CBS News and *The New York Times*. *The Vietnam War*, an interactive encyclopedia, will feature the reporting talents of CBS' Dan Rather and R.W. Apple, Jr. (the *Times*' Saigon bureau chief during the war). The *Times* will supply more than 700 news articles for the program, while CBS will lend its huge backlog of film and videotape to the project. The CD-ROM (slated for release in late '94) is expected to contain illustrative time-lines, interactive maps, and a sizeable photo library.

In other Apple news, StarCore, Apple's budding software division, has established distribution agreements with InterOptica Publishing and the Time Warner Interactive Group. By year's end, that means StarCore will be responsible for handling more than 40 titles from the two publishers. Additionally, StarCore will produce ten CD-ROMs during '94.

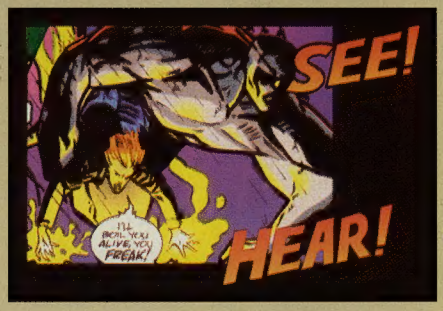
Apple Computer
20525 Mariani Ave., Cupertino, CA 95014
(408) 996-1010

IN BRIEF...

*A new CD-ROM publisher, **Tetragon**, plans to target both of its 3DO titles at the post-boomer Generation X crowd. Tetragon, a spin-off division of graphics specialist **Altsys**, will also publish titles developed by other 3DO licensees. Tetragon plans to release a game called* Gridders *by this summer. Part action, part puzzle,* Gridders *deals with humans fighting ecological shortages and renegade robots.....**Pioneer** is helping to up the ante in the Great CD-ROM Drive Speed Wars. Its upcoming DR-U104X Quadraspin CD-ROM drive (still in preliminary stages) will reportedly have the world's highest sustained data-transfer rate (614 KB/sec.) and a speedy access time that averages 240 milliseconds. It's also multi-session ready.....*

Tetragon's* Gridders *on 3DO.

Look Ma, No Pages!



Ever feel like an outsider? The kids of* FREEX *sure do, especially since these superteens have genetically metamorphosed.* FREEX *is one of three electronic comic books published by* Davidson & Associates *under its new "CDROMIX" line. CDROMIX adds narration and music while advancing the story by sequentially illuminating panels of illustration.* FREEX *(and the other titles,* PRIME *and* HARDCASE*) are all based on the living, breathing characters from Malibu Comics' "Ultraverse" reality. The first editions of each series are on sale now (for PC CD-ROM, with each title moving for around 20 bucks).
Davidson & Assoc., 19840 Pioneer Ave., Torrance, CA 90503 (310) 793-0601

DOS 6.2 Supports CD-ROM Caching

We reviewed four powerful CD-ROM caching programs in our second issue ("Speedy CDs: 4 Caches that Optimize Your CD-ROM Drive"). We mentioned that the SmartDrive cache built into DOS versions 5.0 and above (and included with Windows) was good for caching hard drives, but did not support CD-ROMs.

While the recently issued DOS 6.2 fixes some problems with Doublespace, there are other goodies included. SmartDrive version 5.0 now supports CD-ROM caching, and write-delay caching is disabled by default, just to be safe. With enough spare RAM, you can double or quadruple the speed of your CD-ROM drive. SmartDrive 5.0 is as fast as the other caches reviewed, although it doesn't include extra utilities and fine-tuning options included with *SpeedCache+*, *PC-Kwik*, *Lightning CD*, or *CacheAll*. *CacheAll* alone can cache network CD-ROM drives and use disk space to increase the cache size, and the newest version is even faster.

Jewel Case Jewelry

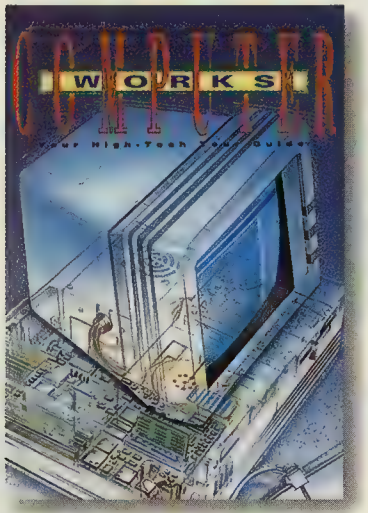
We normally don't endorse any CD-ROM we're convinced absolutely will not run. However, with CEEDEEZ, we've got to bend the rules. The only application for this product is directly onto your clothes. CEEDEEZ offers inriguing geometric shapes (cut from recycled CDs), and fashioned into pins, earrings, and tie bars. Prices are reasonable, ranging in the single digits. Remember, wear 'em, don't play 'em. *CEEDEEZ, 8 Chester Place, Somerville, MA 02144 (617) 666-0152*

IN BRIEF...

...As the next Christmas season rolls around, we should see a new entertainment machine from ***Yamaha****. The electronics/audio giant plans to incorporate a* ***Sega*** *32-bit CD-based game player into its machine. Yamaha will probably develop software for the player and, as you might expect, add new sound functions as well.....Saving the world and flying really neat combat jets are the main activities in* ***Paramount****'s* Jump Raven. *The game utilizes "puppet technology" to give characters responsive facial expressions. Another technique used in* Jump Raven, *radical data compression, lets you switch between action sequences without inducing lengthy delays.....*

Clubabilia

Club KidSoft, a young ROMers' group, has its own magazine/catalog dedicated to what's hot in multimedia. *Club KidSoft* also publishes its own CD containing encrypted software for both PC and Mac. Quarterly subscriptions to *Club KidSoft* go for $9.95, although some computer and book stores will be stocking the magazine/disc. It can be ordered from KidSoft at (408)354-6100.



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SOFTWARE MARKETING CORPORATION

Published by: Software Marketing Corporation
9830 South 51st Street, Bldg. A-131
Phoenix, Arizona 85044
Phone: 602.893.3377 FAX 602.893.2042

Available at all distributors. Call for current pricing.

TO ORDER OR FOR MORE PRODUCT INFO. CALL: 800-364-5451 ext. 300

Product Information Number 173

The Dating Game

Man Enough, ***(DOS CD-ROM, $79.95, from Tsunami) asks how far the average guy will go to win a fabulous rendezvous with a dream girl. Will he go on five preliminary dates, each testing his conversational cool as well as his capacity for strenuous exercise? Can he talk the talk...and ride mountain bikes, too? The answers can be found in*** **Man Enough,** ***which features plenty of dramatized video chronicling one man's whirlwind social life.*** *Tsunami 48677 Victoria Lane, Ste. 201, Oakhurst, CA 93644 (209) 683-8266*

For Mature Audiences

Voyager opened '94 with a slate of sophisticated Mac releases, several of which pay tribute to the human intellect and spirit. *The Complete Maus* retells the Holocaust in comic-book form and portrays Nazis as cats and Jews as mice. *Maus* is based on Art Spiegelman's graphic novel on Holocaust memories of Spiegelman's father (the book won a special Pulitzer Prize).

On a lighter subject, *Cinema Volta* is a book with electronics as its subject. Of particular interest are breakthrough inventors such as Edison, Volta, and Bell. *First Person* is a new series of titles, each profiling a great thinker. The first installment, *Marvin Minsky — The Society of Mind*, details the work and ideas of computer theorist Minsky. Archaeology is the subject of *The First Emperor of China*, which gets down and dirty with the story of the 1974 excavations that unearthed a treasure trove of Chinese artifacts from the 3rd Century B.C. Finally, Voyager turns to pulp with *Comic Book Confidential*, a history and study of the medium that includes interviews with some of the greatest artists and writers in the history of comics.

Voyager

578 Broadway, Ste. 406, New York, NY 10012

(212) 431-5199

Active Is as Active Does

Activision has lived up to its name lately, planning five new CD-ROMs for '94. Leading the pack is *Mechwarrior 2: The Clans*, a futuristic combat simulation from the FASA Battle Tech Universe. *Mechwarrior 2*'s release (for the PC) will be followed by an add-on disk sporting 17 new BattleMechs for your havoc-wreaking pleasure.

Planet Fall (due in Fall '94 for both the PC and Mac) is a follow-up to the renowned 80's Infocom adventure of the same name. The CD-ROM version will use live actors.

One of Activision's biggest draws at the start of '94 is *Return to Zork*. No sequel news, but *Zork* will travel to other formats, namely Mac, 3DO, and Atari Jaguar.

Activision is also looking at the education market. Two CD-ROMs will join the Activision for Kids' Library, both of them showcasing the work of popular children's author Richard Scarry. *Richard Scarry's Busiest Neighborhood Ever* and *Richard Scarry's Best Neighborhood Ever* will both be available for Mac and PC. (*Richard Scarry's Busytown*, from Paramount Interactive, is reviewed elsewhere in this issue.)

Activision

11440 San Vincente Blvd., Los Angeles, CA 90049

(310) 207-4500

Thin is in: Pansonic's EAB Multimedia Speakers

IN BRIEF...

...Upgrading computer sound systems usually means forfeiting precious desktop space to bulky speakers. ***Panasonic*** *has responded with its EAB Multimedia Speaker Systems. Along with magnetic shielding for data protection, both new systems contain Super Bass Exciters. The speakers are extra slim, about the dimensions of hardback books. The smaller of the two sets can be attached to the sides of a monitor.....****Cyberia****, a brand new CD-ROM publisher appears to be pulling out all the stops for its first product, which, coincidentally, is called* Cyberia. *Production costs are estimated at $1.25 million for the futuristic action/adventure, planned for DOS CD-ROM release.* Cyberia *will contain six possible endings for its cinematic story, which will be aimed at 20- to 30-year-olds.....*

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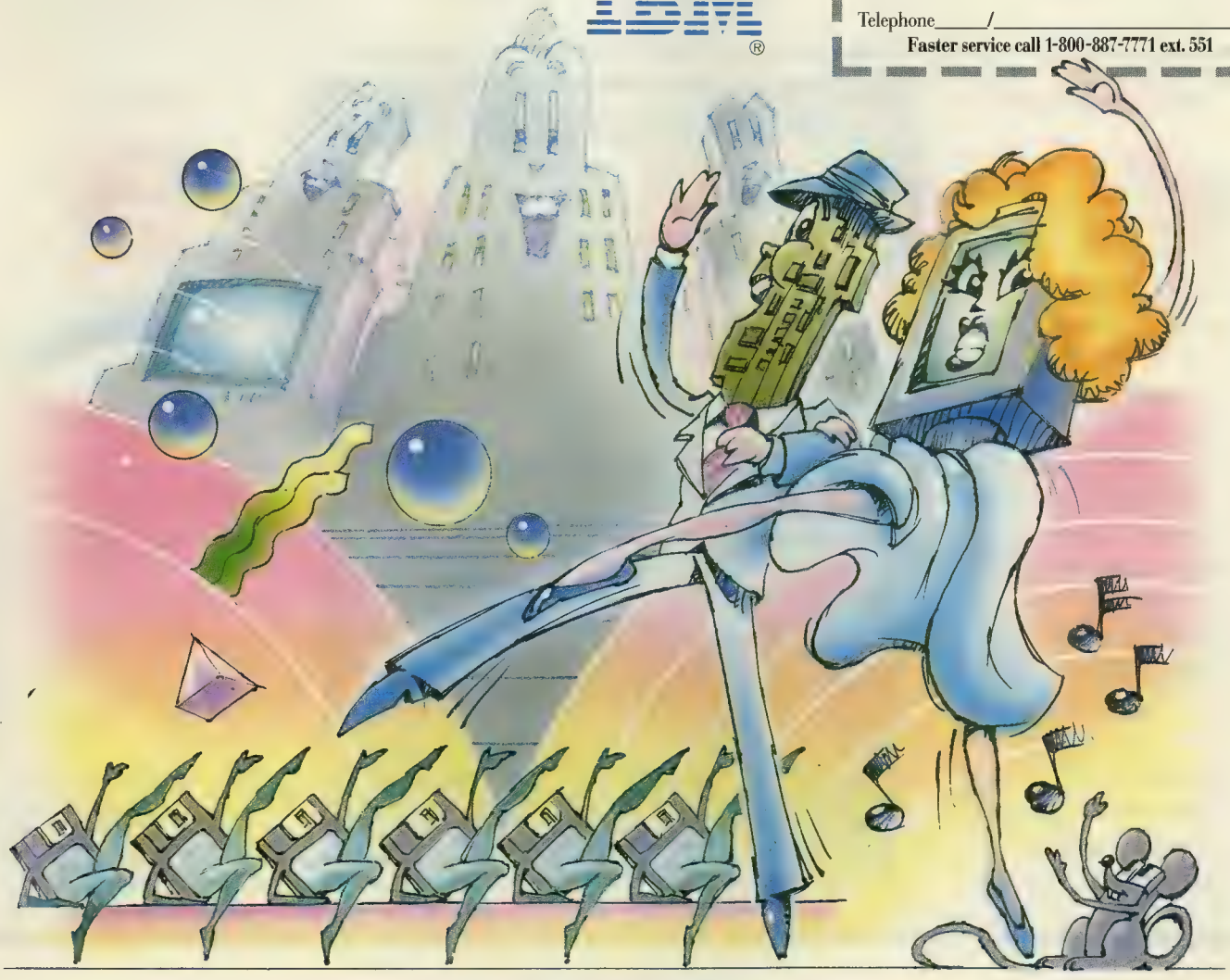

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Product Information Number 157

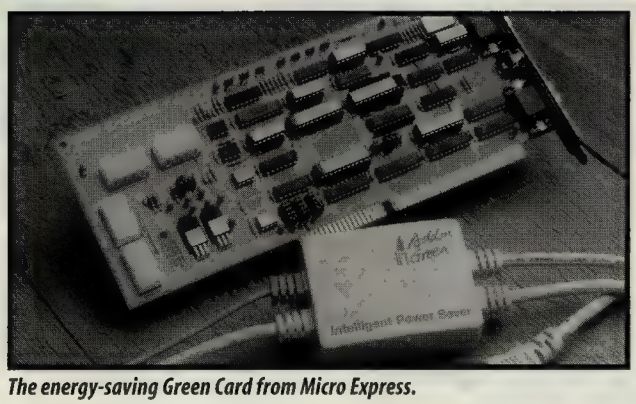
New Bedfellows

MECC, longtime producer of educational software, has entered into a development relationship with textbook publisher Houghton Mifflin. The two parties have designed a math curriculum around a new software series called *MathKeys*, debuting in April.

Similarly, **Davidson & Associates** is working with Macmillan/McGraw-Hill in the areas of math and language arts. The first project for this alliance is customizing some of Davidson's existing products (*Kid Works*, *The Cruncher*, and *Kid CAD*) so they can be used with Macmillan/McGraw-Hill textbooks.

IN BRIEF...

....Although energy conservation may not be as hot a topic as it was under Jimmy Carter, it didn't stop ***Micro Express*** *from creating a device that can save up to 70% of the energy PCs draw. The Micro Express Green Card works on any PC with an X86 chip, and retails for $129. The Green Card powers down your CPU and other peripherals after a predesignated time period. Call Micro Express for more info: (714) 852-1400.....****Crystal Dynamics*** *is seizing the latest trend of casting established performers in software titles. For* The Horde, *its latest 3DO offering, Crystal Dynamics has enlisted the help of former teen idol Kirk Cameron. Cameron, best known as an incorrigable teenager in the domestic comedy "Growing Pains," portrays Chauncey, a medieval hero defending his village against the The Horde.....*



The energy-saving Green Card from Micro Express.

Windows for Workgroups Turns 3.11

A feature in our premiere issue ("Sharing the Wealth") showed you how to multiply your CD-ROM across a *Windows for Workgroups* (*WFWG*) network. *WFWG 3.11* is now available, with improved stability, broader network support (with better interoperability with Novell networks), and increased speed. Network access can be twice as fast as before, and local hard-drive access should improve by nearly half again as much (local disk speed actually tripled in our informal benchmarks), thanks to the new 32-bit file access option. This should make shared

Purple Car Lands on Moon!

Due to a freak accident at the Fireworks Factory, Putt-Putt is blasted to the moon. There he meets Rover, a lonely little lunar terrain vehicle left behind by the astronauts. Putt-Putt and Rover must work together to rebuild a rocket, and accomplish a few good deeds for the Moon People before they meet the Man in the Moon and are homeward bound. Putt-Putt Goes to the Moon teaches the benefits of cooperation and the lasting value of friendship.

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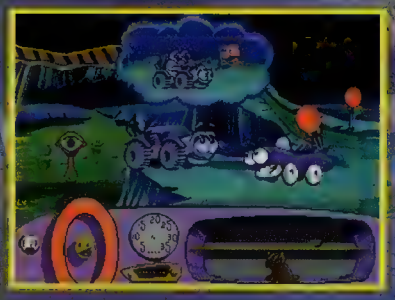

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HUMONGOUS Junior Adventures ENTERTAINMENT

network access to CD-ROMs even more practical than before.

You can send quick FAXes directly from the included Mail software if you have a faxmodem, and you can now share a faxmodem with other network users. You can also FAX from your word processor or spreadsheet just by printing to the "FAX" printer device. And if the recipient is also using *Microsoft FAX At Work*, the file can be sent at laser quality (300 dots per inch). Or you can send a document, such as a *Word* file, and it will be received as an editable *Word* file, not as a page of graphics pixels like you get with a usual fax.

Best of all, you can actually install *WFWG 3.11* on a stand-alone machine without using the network features, and enjoy the best version of Windows yet — something to tide you over until Windows 4.0 arrives early next summer.

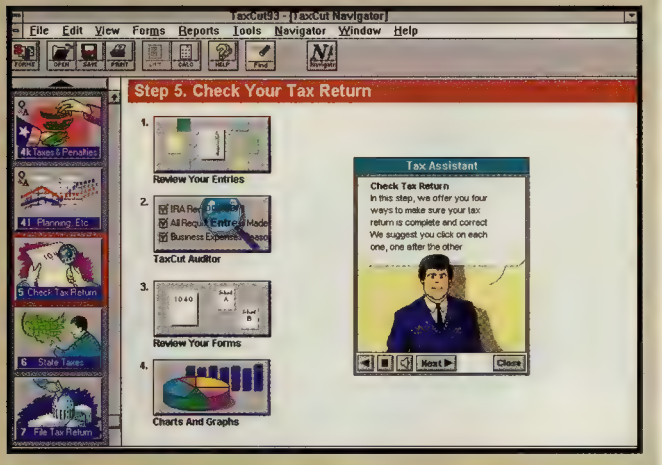
The DOS companion to WFWG, Workgroup Connection 3.11 lets DOS-only computers share their own printers and local drives, including CD-ROM drives, so you can easily set up inexpensive CD-ROM "servers" for everyone to use.

IN BRIEF...

...If you're into CD-ROM in a really big way, take a look at ***Hitachi****'s new super capacity changer, which can hold 200 discs. The changer was designed for developers and system integrators. If 200 discs is too small, you can daisy-chain the unit with three others, and access up to 800 discs, each in under 15 seconds.....Mac fans have a new quarterly magazine: FLUX, and it's packed with all manner of shareware. The first issue boasted a maze for computer criminals and debated the effects a Death Control Pill might have on humanity. The second issue forecasted the next 50 years. A quarterly subscription to FLUX runs $49.50 and is available with a phone call to* ***J.R. Mooneyham & Associates*** *at (615) 623-0854.....*

200 discs, no waiting: Hitachi's super-sized CD-ROM changer.

Let's Talk Taxes...Literally



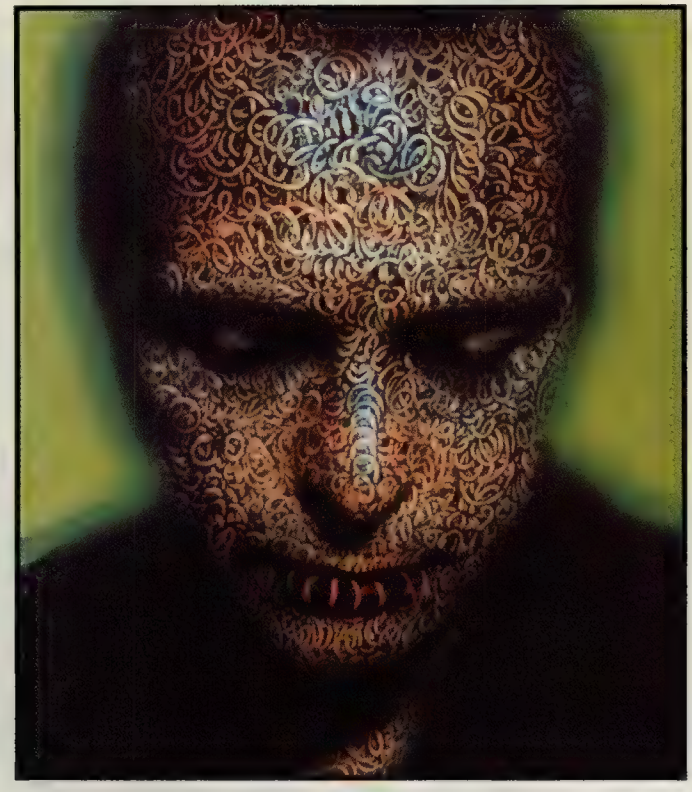
You've probably mumbled some choice phrases at your tax return, but now you can have it talk back to you.* TaxCut Multimedia *is the first PC tax-preparation package of its kind on the market. TaxCut has been a favorite for years, with good reason. It takes some of the frustration out of tax preparation by offering a generous palette of tools to guide you through the rough spots, helping you determine what IRS forms and schedules you need to complete, and making the IRS' obscure language understandable.

MECA Software *is offering its special multimedia version for a suggested retail price of $89.95. Beyond the standard tax preparation tools,* TaxCut Multimedia *includes the full text of IRS instructions (a body of information too unwieldy for the disk-based version), a talking Personal Assistant that walks you through your return, Video Tax Tips, and video clips of Harvard Law School graduate and* TaxCut *developer Dan Caine discussing tax highlights and demystifying tricky 1993 tax issues.* *MECA Software, Inc. 55 Walls Dr., Fairfield, CT 06430 (203) 256-5000*

Lock and Load

American Laser Games will open April with a bang — the release of their Game Gun peripheral. ALG, specializing in live motion picture action shoot-'em-ups like *Mad Dog McCree* hopes their electronic sidearm will convey more arcade thrills than a regular joystick or mouse might. ALG's has four new CD-ROMs, each of them asking you to take aim against dangerous adversaries. *Space Pirates*, for instance, engages you in a cosmic fight to save space settlers, while both *Crime Patrol* and *Drug Wars* pit you against a variety of criminal scum. *Who Shot Johnny Rock?* (DOS, 3DO — $59.95) sends you roaring through the '20's, seeking vengeance for the murder of your friend, a popular crooner.

American Laser Games
4801 Lincoln Road NE, Albuquergue,
NM 87109
(505) 880-1718



Peter Gabriel explores music and multimedia with XPlora 1

These Things Happen...

Let's clear up a few errors reported in our last issue:

1) The correct phone number for Ask Me Multimedia Center (*Super Show & Tell*) is (612) 531-0603.

2) World Library's *Barron's Book Notes* carries a $49.95 suggested retail price.

3) The correct phone number for Binar Graphics (*Anyview*) is (415) 491-1565.

IN BRIEF...

...Musical experimenter Peter Gabriel has released his first CD-ROM on the Mac (other formats are being considered) and it's full of music, from him and others. Gabriel, long interested in world music, fills XPlora1: Peter Gabriel's Secret World *(**Interplay**) with music from around the globe, along with videos from "Us," his latest CD.* XPlora1, *which contains some 100 minutes of video and 30 minutes of audio, is boxed with a collector's edition book.....**Corel**'s new CD-ROM enhancement package,* Corel CD PowerPak *($99 SRP), includes audio software, a .WAV file editor, CD-ROM dedicated headphones, a Photo CD conversion utility, a visual file manager, caching software, and more.....**STOP***

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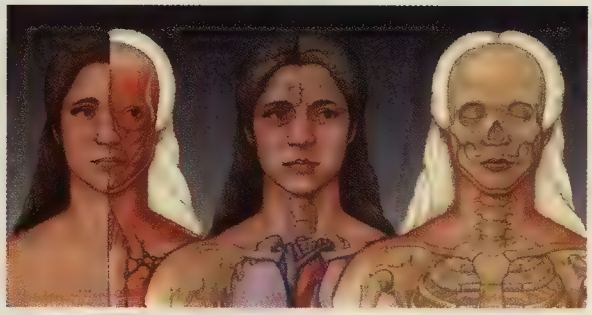

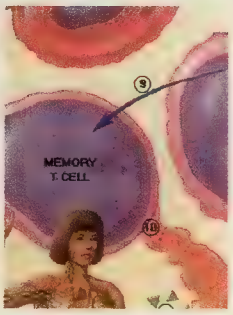

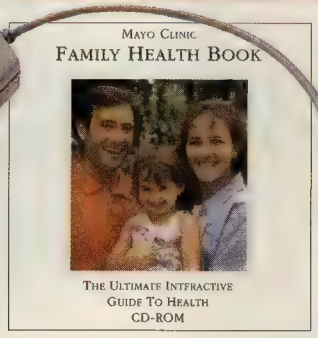

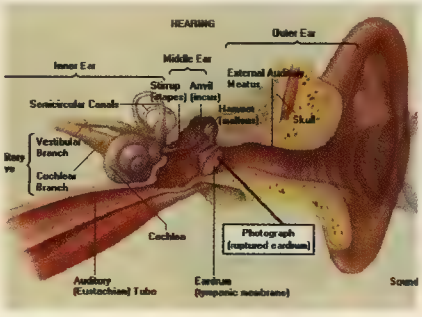

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Multimedia Moves Into the Mainstream

Consider L'Eggs pantyhose. I'd never given it much thought myself, at least not until I read Peter Lynch's *One Up On Wall Street*. But Lynch points out that L'Eggs was one of the most successful consumer items of the past couple of decades, and while it was a fine product as hosiery goes, its success had much more to do with where and how the plastic eggs were sold. Before L'Eggs, hose was found only in specialty and department stores, which most women visit about once every six weeks. L'Eggs entered grocery stores, giving customers a couple of chances to buy them each week, and that's a key competitive advantage in any business.

So far, multimedia CD-ROMs are in the "pre-L'Eggs" era. The market is expanding and CD-ROM sales are growing quickly, but if you want to buy a new disc, you still have to go to a software store or order from a specialized catalog or from a mail-order ad in a magazine such as this one. That isn't such a big problem if you already know which disc you want. But like the grocery store shopper who didn't remember that she needed hose until she saw the L'Eggs display, making it easier to get CD-ROMs can be an advantage for everyone involved, including manufacturers, retailers, and buyers.

Enter Blockbuster Entertainment. Just a few months ago — November 10, 1993, to be exact — Blockbuster kicked off a program to rent and sell CD-ROMs, beginning with 52 video stores and 5 affiliated music stores in the San Francisco area. Discs are offered for several different types of systems: computers (IBM and Mac formats), 3DO, CD-I, and Sega CD systems, with prices beginning at $4 for three nights. Blockbuster is also renting the TV-based players, though they don't plan to rent any computers because of the expense and the complexity of the hardware.

Available titles cover all categories of CD-ROM software, including games, reference, education, entertainment, and business information. Participating stores also have staffers on hand to demonstrate CD-ROMs, a big help for parents trying to determine whether a particular disc is appropriate for their kids.

So where does that leave traditional software retailers, who might feel threatened by this big new kid on the block? According to Michael van der Kieft, Blockbuster's director of business development, "Our desire is not to be a competitor, our desire is to stimulate the growth of multimedia CD-ROMs."

> ***"Our desire is not to be a competitor. Our desire is to stimulate the growth of multimedia CD-ROMs."***
>
> ***— Michael van der Kieft, Blockbuster***

Blockbuster maintains that giving consumers the chance to rent CD-ROMs helps the entire industry, including other retailers. When customers have the option either to buy or to rent CD-ROM titles, they're that much more likely to invest in multimedia hardware. And with more multimedia systems in place, there are more customers and a larger CD-ROM market. Rentals also give customers the chance to try before they buy, and the follow-up sales won't all be made at Blockbuster stores. Rentals could stimulate sales for all CD-ROM dealers.

Van der Kieft compares CD-ROMs to the videotape market, where VCRs are now found in 85 percent of all U.S. homes, thanks in large part to the wide availability of rentals. Blockbuster wants to do the same for multimedia. He adds, "If we can make multimedia ubiquitous, we can benefit the whole market, including hardware makers, software developers, and even other retailers."

With hundreds of titles now available, CD-ROMs are taking their place in a continuum of electronic media that includes videotapes, videogame cartridges, and VideoCDs (ordinary theatrical movies released on compact disc). Blockbuster chose the San Francisco stores for the program's initial roll-out because of the strong support for multimedia found in that area, but CD-ROMs should be available in all company-owned stores (830 of 3,316 stores are franchised) by November of this year.

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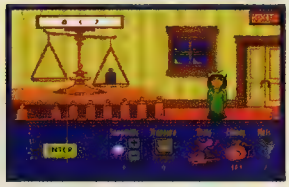

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Product Information Number 169

Picking Up the Tempo

If you're a game player, chances are you pay little attention to the musical soundtrack. And, to be realistic, computer game music hasn't historically offered a lot to cheer about. Much of it is simply annoying, but even when it's not, it's rarely spectacular.

Recently, though, this has begun to change. Over the next year, expect it to change even more. The combination of the CD-ROM medium with wavetable and digital audio, now available for any decent multimedia system, will finally make computer game music something worth hearing.

At least it will if the likes of Michael Land, Mark Seibert, and George Sanger have anything to say about it. Which they most assuredly will.

Expect the soundtracks for multimedia games to evolve dramatically — with the latest technology, the rules have changed.

Michael Land heads the audio group at Lucas Arts. Together with Peter McConnell and Clint Bajakian, Land has created the musical landscapes for such notable games as *Indiana Jones and the Fate of Atlantis*, *Monkey Island 2*, and *Sam and Max Hit the Road*. The team works with an innovative proprietary system called *i*MUSE, which effectively allows them to seamlessly integrate the music in a game as you move from scene to scene.

According to Land, the popularity of CD-ROM will change the way we perceive music for games. "What's likely to happen is that people are going to figure out how to score digital audio for an entire game. Right now a typical multimedia game has only about a dozen pieces of music, but this will change dramatically." He points to the recently released LucasArts game, *Star Wars: Rebel Assault*, as "a very good template for the future. It has music that cuts smoothly across scenes and a smooth combination of digital sound effects. It comes reasonably close to a film experience.

"The use of CD-ROM," Land concludes, "opens up to the composer the possibility of committing his music to a stereo recording, and every player will hear the same result regardless of which sound board he's using. All of this points to the long-fabled merging of television and interactive computer games."

Mark Seibert essentially agrees. Producer and musical director for Sierra On-Line, Seibert sees CD-ROM as providing the opportunity to "do real music, songs recorded in a studio with live musicians," and he's not sure even MIDI has much of a future.

"I wonder how much longer we'll be using MIDI," he muses. "I'm debating about producing *Phantasmagoria* [an upcoming CD-ROM horror game from Sierra] with all-digital music and effects. We have all kinds of really great compression techniques that will allow us to start upping bit rate and sample rate," thereby producing much higher quality sound.

"The director for *Phantasmagoria* is a Hollywood director," he adds. "We're moving towards interactive Hollywood style movies."

George Sanger, a.k.a. The Fat Man, is the most well-known computer game musician, having appeared as the subject of a widely distributed Associated Press story. Sanger and his group of three artists work independently, contracting with computer game publishers to produce soundtracks. Team Fat is responsible for the sound and music in Virgin's *The 7th Guest* and a host of other popular games.

Sanger sees the combination of CD-ROM and advanced sound board as crucial to the coming revolution in entertainment. "It seems very clear," he says, "that given enough time what we're doing now will pan out into one of the biggest entertainment movements that's ever happened. We're at a place in our history that's analagous to Buddy Holly trying to find a skating rink where he can play his rock 'n' roll."

Anyone who has followed the convergence of multimedia technologies already knows that we're headed towards a new level in sophistication, quality, and achievement in computer-based entertainment. And for those who appreciate music, it's nice to know that high-quality, innovative soundtracks will be a significant part of the equation.

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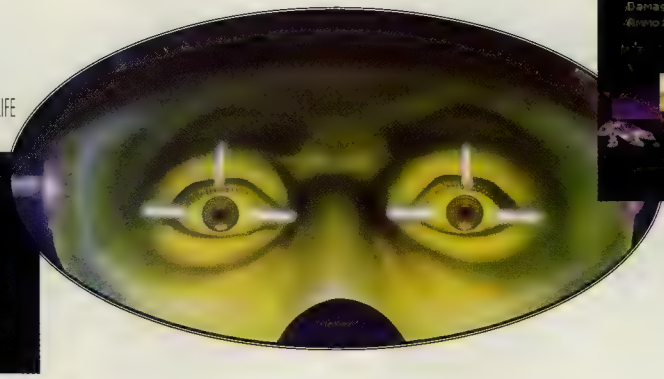

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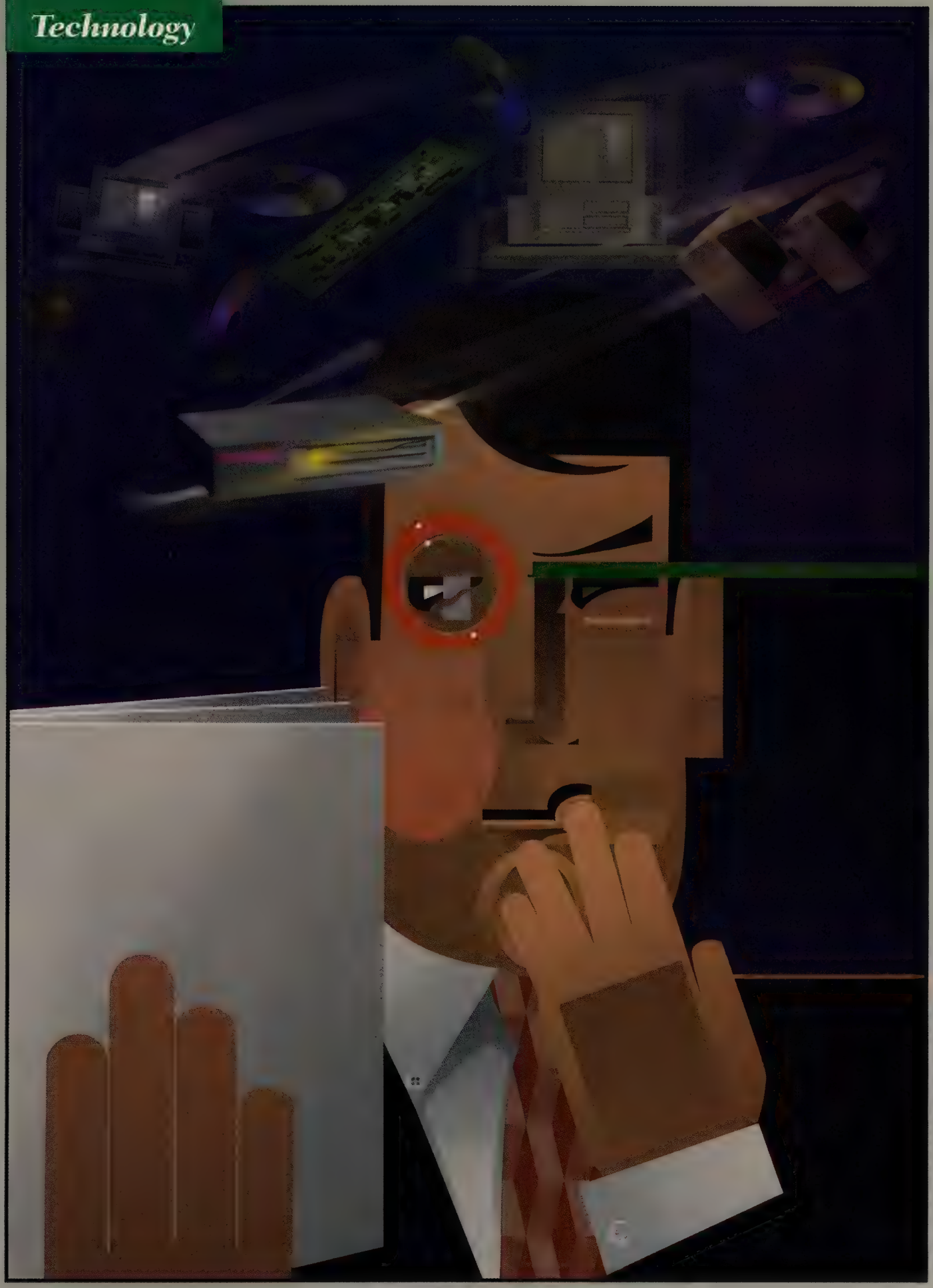


The 3 Paths to Multimedia Nirvana

Tom Benford

Buy, build, or upgrade? Explore the three routes you can take to achieve state-of-the-art multimedia computing.

Multimedia has arrived big-time and picked up lots of momentum along the way — far in excess of what industry pundits had predicted. And while there were only a handful of multimedia-ready systems and upgrade kits available just one year ago, today's PC user has three distinct ways of reaching multimedia Nirvana: 1) Upgrade an existing PC to multimedia capability; 2) Purchase an off-the-shelf multimedia system; or 3) Build a system from scratch using individual components. Having all of these choices is a mixed blessing — you have plenty of options, but that also makes deciding what's best for you somewhat confusing. This article (not for the Macintosh user, who can purchase an all-in-one multimedia solution) will explore each of these "paths" and help you decide which one you'll want to take. But first, let's define what "multimedia" currently means.

Specs, Please

The Multimedia PC Marketing Council, a subsidiary of the Software Publishers Association, was founded to provide a set of standard specifications defining multimedia requirements for IBM-compatible personal computers. The intention was to establish a standard multimedia computing platform as an extension of the desktop PCs already in use by millions. The resulting standard, known as MPC Level 1, has since been adopted around the world. This original Multimedia PC (MPC) specification was adequate for the hardware that was current at the point in time the MPC code was drafted (1990), but it falls woefully short in light of the advances made in PC technology since then.

In May 1993, a revised standard known as MPC Level 2 was published by the Multimedia PC Marketing Council. This enhanced standard is more consistent with the hardware required to get the kind of performance everyone wants (and expects) from multimedia products. It's important to note that Level 1 specs continue in full effect, and, unless a system meets all Level 2 requirements, it's still regarded as an MPC Level 1 machine. The accompanying table illustrates the differences between the MPC Level 1 and Level 2 specifications.

Requirements:	MPC Level 1	MPC Level 2
Hard Drive	30MB	160MB
CD-ROM Drive	150KB/sec. sustained transfer rate, maximum average seek time 1 second	300KB/sec. sustained transfer rate, maximum avg. seek time 400 milliseconds, CD-ROM XA ready, multisession capable
Sound	8-bit digital sound, 8-note synthesizer, MIDI playback	16-bit digital sound, 8-note synthesizer, MIDI playback
Video Display	640x480, 16 colors	640x480, 65,536 colors
Ports	MIDI I/O, joystick	MIDI I/O, joystick
Recommendations:		
RAM	64KB on-board buffer	8MB
CD-ROM		64KB on-board buffer
Sound		CD-ROM XA audio ability, support for IMA adopted ADPCM algorithm
Video	640x480, 256 colors	Delivery of 1.2 megapixels/sec. given 40% of CPU bandwith

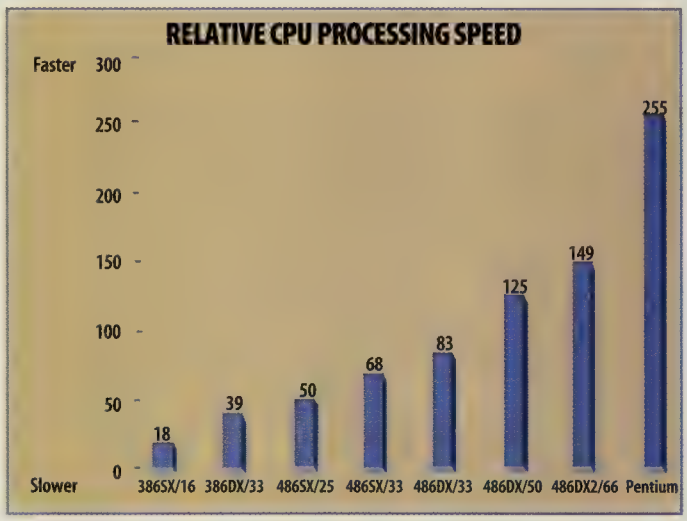
Please note that the above requirements are minimum system requirements and not a recommendation by the Multimedia PC Marketing Council for any particular system configuration. Complete information regarding the specifications is available from the Multimedia PC Marketing Council, 1730 M Street NW, Suite 707, Washington, DC 20036-4510 (phone: 202-331-0494, ext. 327; fax: 202-785-3197).

As you can see from the table, hardware has come a long way in just a few short years. So much so, in fact, that the 80386 CPU has become passé, especially with the low prices of entry-level 486-based systems now offered by many major vendors. Since the CPU is the core of every computer system, we'll start our discussion of multimedia systems right here, at the heart of the matter.

Path 1: Upgrading

CPU Strength, Motherboards, and Upgrades

The low-end, 25MHz 486SX chip will run circles around a 33MHz 386DX, and the best way to illustrate this is via the CPU chart provided courtesy of Computer Product Testing Services, Inc. (Manasquan, NJ).



If your present system is based on an 80386 chip, you should seriously consider a CPU upgrade. While you may be able to squeak passable performance out of a 386/33MHz, there's still a night-and-day difference between that and a 486SX/25 or higher CPU. Bear in mind, however, that multimedia applications will continue to become more sophisticated, and the demands on the CPU and other system components will grow, so moving up to a 486 or Pentium-based CPU makes sense now.

Some system motherboards will permit replacing an 80386 chip with one of the 486 varieties. While not all 386 motherboards allow this, making such a switch with those that are upgradeable typically consists of changing some jumper settings on the board and swapping out the chips themselves. If your motherboard will support an upgrade, this is the easiest and least expensive way of getting more CPU horsepower under your hood.

A 486 SX25 chip can be had for under $200 from several vendors and mail-order houses. Be sure to check the owner's manual that came with your system, or call the manufacturer to confirm that your motherboard can accept a 486 chip upgrade. Some suppliers offer a trade-in allowance for your 386 chip, which will further lower the cost of upgrading.

For 386 owners whose motherboards aren't transplant-friendly, upgrading the whole motherboard may be the most cost-effective and logical way to go. There are several sources of low-priced motherboards complete with 486 chips in various "flavors" which make this an attractive alternative to consider as well. By upgrading the motherboard with CPU, you recycle all (or most) of the other system components, such as RAM SIMMs, floppy and hard drives, the system case, monitor, and other items. If you decide to upgrade the motherboard, it's best to select one that at least has most of the essential components, such as the IDE drive interface, with serial and parallel ports integrated into it (this saves the expansion slots for installing other peripheral items). And since most multimedia applications are so video-intensive, it's also a good idea to get a motherboard with integrated local-bus video. The local bus will speed up video processing considerably, and it also saves a slot, not to mention the cost of purchasing an SVGA video card.

If you happen to own any of the 386 PCs made by Gateway 2000, you'll be particularly interested to know that the company is currently offering an upgrade special. Actually, Gateway has two upgrade programs: one for owners of 386DX Gateway models in full-size AT cases, and the other for Gateway 386SX

mini-desktop owners. Either of these upgrade packages costs $699 (user installed), or for an additional $135, Gateway will do the job for you. Here's what the upgrade packages consist of:

Gateway 386DX Full-Size AT Case Owners: The upgrade includes a baby-AT 486 motherboard with Phoenix BIOS, Intel DX2/50 OverDrive processor, 64K cache, 8 ISA expansion slots, and 4MB of RAM (upgradeable to 64MB).

Gateway 386SX Mini Desktop Owners: This upgrade includes a slimline 486 motherboard with Phoenix BIOS, Intel DX2/50 OverDrive processor, local bus IDE interface, 4MB RAM (upgradeable to 64MB), and a Western Digital Graphics accelerator with 1MB DRAM installed.

RAM

If the CPU is the heart of the machine, then RAM is the blood of the beast. While virtually all 486-based machines shipping today come with 4MB of RAM, this is really just a base configuration. To get good multimedia performance, you'll want to have at least 8MB of RAM, with 12-16MB being highly desirable. Windows 3.1 can effectively access only 16MB, but if you'll be upgrading to Windows NT, you'll be able to access and use as much RAM as your motherboard can accommodate. I've also found that having excess RAM beyond the first 16MB doesn't go to waste (my personal system has 32MB installed); the extra RAM can be used as a RAM disk — this comes in handy for doing video captures or for working with large, multi-track audio files when preparing, say, a multimedia presentation. Of course, you can also allocate any excess RAM as additional virtual workspace using some of the better memory management products available. As with CPU speed and muscle, you can't have too much RAM.

> To get good multimedia performance, you'll want to have at least 8MB RAM, with 12-16MB being highly desirable.

Hard Disk Storage

If you remember the days when an 80MB hard drive was considered enormous, then you're showing your age! Hard drives of 200MB and even larger are considered average these days, as are access times under 20 milliseconds. The rule of thumb here is to upgrade to a drive as large and as fast as your wallet will allow; in many cases you can just add a second hard drive to your existing setup to gain additional storage.

Full-motion video and CD-quality audio (16-bit, 44.1kHz) take lots of storage space, so half-gigabyte and larger drives aren't as outlandish or excessive as they may at first seem. IDE and SCSI-interfaced drives offer the best combination of price and performance. If your CD-ROM drive uses a SCSI interface, you'll also be able to daisychain a SCSI hard drive with the same interface card.

Fast Video

If you don't already have a video adapter capable of super VGA (800 x 600, 256 colors) with at least 1MB of video RAM installed, this should be another item on your upgrade shopping list. Most multimedia applications, particularly those incorporating full-motion video, are designed to run with a minimum palette of 256 colors; hi-color cards supporting 32K or 64K colors are even better, but these extended palettes aren't always available at higher screen resolutions (e.g., 1024 x 768). Be sure to consider video speed as one of your prerequisites; a rich palette on a card with slow refresh rates isn't going to be very satisfying, so look for cards that use video accelerator chips such as the S3 and Tseng 4000 series for the best performance on standard-bus motherboards. If the motherboard has a local bus slot, then a local-bus video card is definitely the way to go.

You'll also need a monitor capable of fast refresh rates commensurate with the capabilities of the video card to get the best viewing possible. While a 14-inch monitor is perfectly adequate for 800 x 600 resolution, you'll find it to be taxing on the eyes if you want to use the 1024 x 768 or 1280 x 1024 modes; a 15-inch or, better still, 17-inch or larger monitor is best for diplaying these SVGA resolutions. A non-interlaced monitor will afford the most comfortable viewing without annoying (and eye-tiring) flicker, and the few additional dollars for a non-interlaced model is well worth the extra expense.

CD-ROM Drives

A double-speed or multi-speed drive capable of delivering a steady, sustained data-transfer rate of at least 250KB per second is the slowest drive you should consider, with 300KB or faster transfer rates being more desirable. Add to these requirements a built-in data buffer of at least 64KB and a maximum seek time of 350 milliseconds to ensure adequate performance for playing multimedia CD-ROM software. Other desirable features of the drive include CD-ROM XA (extended architecture) and Kodak PhotoCD capability (at least single-session, although multisession capability is better).

Aside from these basic specs, several other options when

selecting a CD-ROM drive are largely a matter of personal choice, as well as system and budgetary considerations. These choices include whether to choose a drawer-type drive in which you insert the disc directly or use a caddy dedicated to receiving the disc. External drives permit moving the drive easily from one machine to another and are easiest to hook up, although they require a separate AC power source. Internal CD-ROM drives nestle into any available 5.25-inch drive bay that affords front access and draw their power directly from the PC's power supply (they're also generally about $100 cheaper than the equivalent external models).

CD-ROM Interfaces

An interface is required for the CD-ROM drive to communicate with the host PC, and there are some decisions to be made in this area as well. Sony, Hitachi, Philips, and Matsushita/Panasonic all use their own proprietary interfaces, although each of these manufacturers also makes SCSI-interfaced models of their drives as well. Generally speaking, there's no great advantage in using a proprietary interface over a SCSI except that the manufacturer may have a slightly lower price on its proprietary models. If you own a sound card, however, chances are good that it may already have a CD-ROM interface integrated into it. Be sure to check this out before you go shopping for a drive — you may be able to save some money by purchasing a drive that can use the sound card's interface (provided, of course, you're happy with your current sound card and aren't thinking of upgrading that as well).

Sound Cards

It's truly a beggar's banquet when it comes to selecting a sound card for your multimedia machine. Thanks to their incredible rise in popularity, brought about with the advent of Windows 3.1, you have your choice of low-end 8-bit cards for about $100 or go all the way to the top of the heap with 16-bit cards that are literally professional sound studios on a circuit board.

As with virtually every other computer peripheral, the more features and capabilities, the higher the price. You should consider what you want the sound board to do before making a purchase decision. For example, if you're primarily interested in the audio playback of commercial software (games, for example), a mid-range sound card costing under $200 should fit the bill nicely. Typically, cards of this caliber will provide SoundBlaster compatibility, support recording, and utilize an FM synthesis chip as the sound-generation source. Other common standard features include a combination MIDI/joystick port and the ability to accept input from a microphone and line-level sources such as a CD-ROM drive. Some popular cards that fall into this category are the SoundBlaster Pro and the Media Vision Pro Audio Spectrum.

If you're interested in higher quality stereophonic sound, consider a card that utilizes a wavetable sound generator and incorporates a DSP (digital signal processor). The principal advantages of cards using these components is much better sound quality and a wider range of special effects. Wavetable sound uses actual digital samples of real instrument sounds, as opposed to FM (frequency-modulated) synthesis, which generates facsimiles of musical instrument sounds. FM-based cards are limited by their FM chips as to the number and complexity of sounds they can generate; since the sounds of wavetable cards are software-based, new or additional sound "patches" can be downloaded to the card at any time. Wavetable cards also usually provide an option for adding additional memory to increase the on-board voicing capabilities. Digital signal processing is also an inherent design feature of wavetable-based cards, and this makes it possible to add special effects, such as reverberation, echo, flanging, cross-channel panning, and more to give sounds and music more realism and spatial acuity. These cards also usually have an FM-synthesis chip or the ability to emulate one to ensure compatibility with software designed for FM-based cards. Wavetable cards typically sell for $300 or more, but if you're serious about getting the best recording, playback, and music/sound effects, these are definitely the cards of choice.

If you're a true aural connoisseur and your pockets are deep enough, you might want to consider one of the very high-end sound cards that gives extended music and MIDI synthesis capabilities as well as a plethora of recording compression options. Cards like the Turtle Beach MultiSound and the Antex Z1 (with the ZWave 32-voice Ensoniq daughterboard option) typify the professional-quality cards that feature 24-voice (or greater) multitimbral music capabilities, 16-bit stereo recording at 44.1kHz (Redbook Standard CD Audio) and variable-ratio compression options, as well as wavetable, digital sampling, and impressive mixing/processing capabilities. Boards of this caliber will cost $600 or more, but if sound really turns you on, these are the cards that will deliver top performance.

Audio Input/Output Items

You'll need speakers or headphones to handle the audio output of your multimedia setup, so be sure to add these items to your shopping list as well.

Many sound cards come with a decent microphone as part

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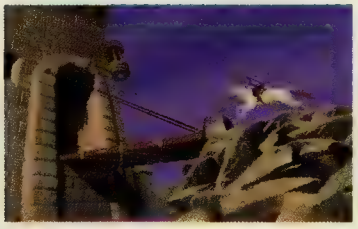

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For the PC CD-ROM

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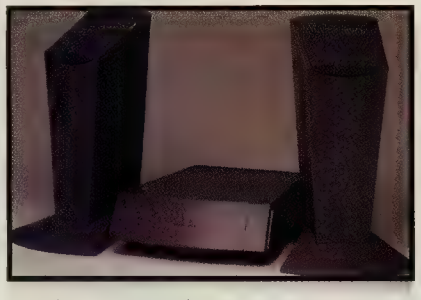
of the package, and they usually have a "Y" adapter cable that has a stereo miniphone jack at one end and dual RCA-type jacks at the other for routing the sound to a stereo amplifier. If these items aren't included with the sound card, you'll have to purchase them separately.

A decent set of lightweight Walkman-type stereo headphones will provide private listening to your sound card's output, while a pair of unamplified speakers (also the type typically used with a Sony Walkman) are basically all you'll need for adequate sound reproduction at room volume levels. If your system is in a noisy environment, or if you just like to crank up the volume, consider purchasing a pair of good amplified speakers such as the Labtec CS-150 series (about $20-$25 per pair).



Looking as though it were created by an advanced alien culture, Media Vision's Memphis system provides an attractive external means of adding multimedia capabilities to your PC. The center unit houses the CD-ROM drive and audio controls (and can also be used as a stand-alone audio CD player). The speakers are detachable and can be separated up to eight feet for maximum stereo effect.

The Upgrade Kit Route

Several major manufacturers have put together upgrade kits, which generally consist of a CD-ROM drive, a sound card with integrated drive interface, setup and driver software, cables to connect all components, documentation, and usually some amenities, such as a microphone, patch cables, and speakers and/or headphones. Some CD-ROM software is frequently bundled with upgrade kits as well, Here's a look at some of the better multimedia upgrade kits currently available from major manufacturers. (Note that there several dozen upgrade kits on the market — it will pay you to study the components and prices of as many kits as you have the time to examine.)

• *Media Vision Fusion DoubleCD 16 Kit*: This package consists of the popular Media Vision Pro Audio-Spectrum 16 sound card with integrated SCSI interface and an NEC 55J Double Speed CD-ROM drive that features a 64K buffer and 350ms access time as well as PhotoCD multisession capability. A pair of Labtec CS-550 amplified speakers are included with this kit, and four multimedia CD-ROMs are also bundled: *Compton's Interactive Encyclopedia for Windows, Arthur's Teacher Trouble* from Broderbund, Interplay's *Battle Chess Enhanced* and Virgin Games' *The 7th Guest*. The suggested retail price for the Fusion DoubleCD 16 kit is $899.

All Creative Labs upgrade kits feature the same double-speed internal CD-ROM drive, but the sound cards and bundled software vary. The Discovery CD 8 kit (right) is an affordable entry-level way to go with an 8-bit Sound Blaster card, while the DigitalEdge kit represents the company's top-drawer offering with the Sound Blaster 16-ASP card and assorted presentation software.

• *Media Vision Memphis Multimedia Upgrade System*: Rather than being a kit composed of discrete components, the Memphis is more accurately described as an upgrade *system*, since it is a single add-on unit that contains all of the required multimedia components. The Memphis system consists of a chassis with CD-ROM drive and audio controls, a pair of detachable speakers, an interface/sound card that installs inside the PC and all necessary cabling and setup software. A single cable connects the Memphis chassis to the computer, and each of the speakers is connected to the chassis by a four-foot cable that affords optimal sound separation. Two really nice features about the Memphis system are that it can function as a stand-alone audio CD player (it doesn't have to be attached to the PC to play audio CDs), and that the whole unit fits nicely under the PC's monitor. Installation of the Memphis system is exceptionally easy, even for a total novice, and an assortment of popular CD-ROM software titles are bundled with the system. The suggested retail price for the Memphis system is $999.

• *Creative Labs Sound Blaster Discovery CD 8 Multimedia Kit*: This is a good basic kit, consisting of a Sound Blaster Pro Deluxe (8-bit) stereo sound card with integrated interface, a double-speed internal CD-ROM drive, a pair of amplified speakers, and an assortment of educational software titles. The drive is MPC Level 2 compliant and boasts an access time of 320ms as well as a 64KB buffer, multisession PhotoCD capability, and it's CD-

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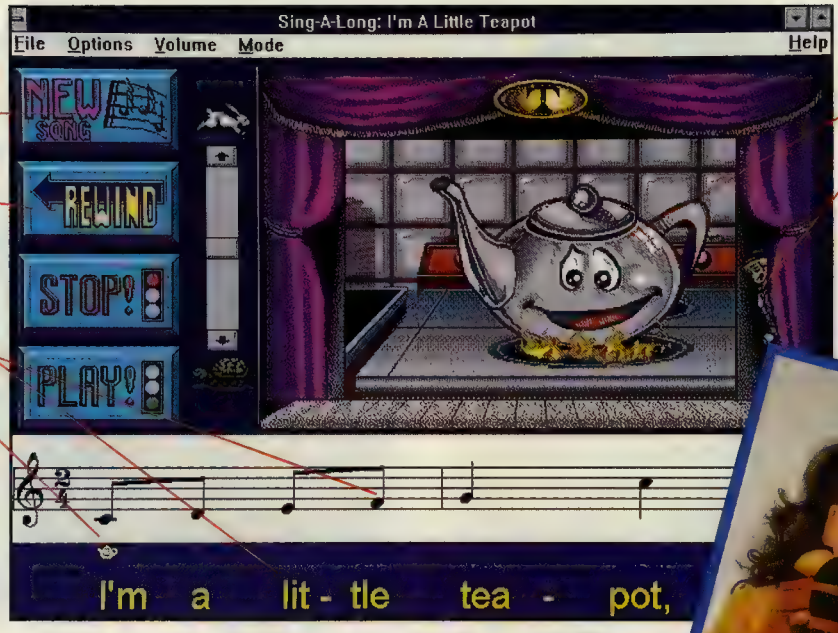

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CDRTW

ROM XA-ready. Suggested list price for this kit is $549.95.

- *Creative Labs Sound Blaster Discovery CD 16 Multimedia Kit*: A kit that features the same CD-ROM drive as the Discovery CD 8 kit described above, but substitutes a Sound Blaster 16 card to deliver 16-bit sound. Amplified stereo speakers are also included, along with an assortment of educational and PhotoCD access software on CD-ROM. Suggested list is $649.95.
- *Creative Labs Sound Blaster Edutainment CD 16 Multimedia Kit*: This package has the same hardware components as the Discovery CD 16 kit, but adds additional software titles to the bundle (ICOM's *Sherlock Holmes: Consulting Detective* and LucasArts' *The Secret of Monkey Island*, *Secret Weapons of the Luftwaffe* and *Loom*, as well as others). Suggested list is $749.95.
- *Creative Labs Sound Blaster Digital Edge Multimedia Kit*: This is Creative Labs' top-of-the-line multimedia kit, and includes the same double-speed CD-ROM drive as the other kits, but spotlights the Sound Blaster 16-ASP (Advanced Signal Processing) sound card. Along with amplified stereo speakers, a good quality dynamic microphone is included, plus VoiceAssist speech recognition software, and an assortment of presentation, reference, and image-processing software. Suggested list is $999.95.
- *Sony Desktop Library Model CDU 33L Multimedia Kit*: Sony's CDU-33A double-speed CD-ROM drive is the center of this multimedia kit. The drive uses Sony's proprietary bus, which connects via a cable to the integrated interface on the Sound Blaster Pro 16-bit sound card. The drive features a 300KB/second sustained transfer rate, a 320ms access time, an on-board 64KB buffer, and multisession PhotoCD capabilities. The drive mounts internally in any front-accessible 5.25-inch drive bay and uses a tray-loading mechanism so caddies aren't required. A pair of amplified Sony speakers and an assortment of CD-ROM titles are included in the kit. Suggested list is $569.95.

Path 2: New System

Off-the-Shelf Multimedia Systems

Without a doubt, the most painless way to get into multimedia is to buy a completely configured multimedia computer system. Many of the better manufacturers offer systems that are "ready to roll" as soon as you take them out of the box and plug them in. Everything you need — CD-ROM drive, sound card/interface, software — is already installed and loaded. Here's a look at some of the better multimedia-ready systems currently available:

- *AST Bravo LC 4/33s, Model 173M* (suggested list: $1,627) — This system is based on an Intel 486SX/33MHz CPU with a 170MB hard drive, 4MB of RAM (expandable to 64MB), and local-bus graphics with 1MB of video RAM. Four 16-bit expansion slots and five drive bays permit expanding beyond the single 3.5-inch floppy drive installed, and the motherboard has support for a Pentium Overdrive processor as well. The multimedia components consist of a Media Vision ProAudio Spectrum (16-bit) sound card with an integrated SCSI interface and a Sony 33A double-speed drive that features 320ms access time. Also included are Labtech CS-550 amplified speakers, a dynamic microphone, and an assortment of software.

AST's high-performance Premmia (left) includes a 486DX2/66MHz chip with 8MB of RAM and a 340MB hard drive. Multimedia components include a ProAudio Spectrum sound board, Toshiba 3401B double-speed drive, and Labtec speakers. The Premmia carries a $3,449 SRP. AST's Bravo ($1,667 SRP) is a 486SX/33-based system that includes a 170MB hard drive, 4MB of RAM, local-bus graphics with 1MB of RAM, Sony 33A double-speed drive, ProAudio Spectrum sound board, and Labtec speakers.

- *AST Premmia 4/66d, Model 343M* (suggested list: $3,449) — This high-performance system comes with a 486DX2/66MHz CPU, backed by 8MB of RAM (expandable to 128MB) and a 340MB hard drive. Video chores are handled by AST's LocalMotion accelerated video card with 2MB of video RAM — five EISA bus-master expansion slots and five drive bays provide plenty of expansion options. The system is Pentium upgradeable, and it also has a 238-pin ZIF Overdrive socket. Major components include a Media Vision ProAudio Spectrum (16-bit) sound card and a Toshiba 3401B SCSI double-speed CD-ROM drive (220ms access time). Labtec speakers and an assortment of business-oriented software is also bundled with this system.

AST offers a number of other multimedia-ready computer systems available in various configurations and price ranges; contact the company directly for additional information.

- *Dell Dimension XPS P60 System* (suggested list: $2,999) — If

The latest version of the Tandy Sensation! ($1,999 SRP) is a complete multimedia PC system that complies with MPC Level 2 specs. Features include a 33MHz 80486SX CPU with 4MB of RAM, 212MB hard disk, dual-speed CD-ROM drive, local-bus video with SVGA graphics, 9600-bps fax/2400-bps modem, and Sound Blaster 16.

you want to be at the front of the pack when it comes to technology, this is the multimedia system of choice. Based on the Intel Pentium P60/60MHz CPU, the basic system comes equipped with 8MB of RAM, a 450MB hard disk, a 3.5-inch floppy drive, a #9 PCI video card with 1MB of video RAM, and 256KB of write-through cache. Also included are a double-speed CD-ROM drive, a Super VGA color monitor, and a mouse. DOS 6.0 and Windows 3.1 are also part of the standard complement. Factory-installed options include a Sound Blaster 16 sound card, Photostyler CD, Sound Effects Library, and Multimedia Sound Studio CD.

Dell assembles a variety of different systems in other configurations, including 486-based systems with numerous factory-installed peripherals that offer full-motion video cards, tape backup drives, modems, and more. Call Dell for more information on available configurations and pricing.

• *Tandy Sensation! MPC* (suggested list: $1,999) — A good multimedia-ready system for home or business users, the Sensation! MPC is based on a 33MHz 80486SX CPU with an OverDrive ZIF upgrade socket on the motherboard. Standard features include 4MB of RAM (expandable to 64MB), a single 3.5-inch floppy drive, a 212MB hard disk, three 16-bit expansion slots, an open 5.25-inch drive bay, and local-bus video with SVGA graphics (65,536 colors in 640 x 480 mode). The system also contains a 9600-bps (send and receive) fax/2400-bps data modem, serial, parallel, MIDI, mouse, and joystick ports, as well as a two-button mouse. The multimedia chores are handled by a dual-speed multisession PhotoCD-compatible CD-ROM drive, and a Sound Blaster 16 card. The price includes an SVGA monitor ($1,799 for the system without the monitor), and an assortment of productivity and reference software.

• *Gateway 2000 4DX2-66V* (suggested list: $2,995 plus added options) — This muscular system features a 66MHz 80486DX2 CPU at its core, with 16MB of RAM (expandable to 64MB), a single 3.5-inch floppy, and a 424MB IDE hard drive with 128K multi-segmented cache. Local-bus IDE controllers are integrated on the system board, and an ATI Ultra XLR video card with 1MB of video RAM on the VESA local bus provides a bright signal to the 15-inch CrystalScan 1572FS color monitor that supports up to 1024 x 768 in non-interlaced mode. The system board is OverDrive ready, Pentium upgradeable, and six of the seven 16-bit ISA slots are available in the standard configuration (two have 32-bit VESA local-bus extensions). An internal CD-ROM drive is installed in this standard configuration, although other multimedia components are factory-installable extra-cost options (Sound Blaster 16-ASP, $195; Labtec CS-180 amplified speakers, $25).

Gateway packs lots of muscle into the 2000 ($2,995 SRP), starting with a 66MHz 486DX2 chip and 16MB of RAM. An internal CD-ROM drive is included, and a factory-installed SoundBlaster 16-ASP and Labtec CS-180 amplified speakers are extra-cost options. Gateway also offers a multimedia upgrade kit (drive and sound card) for under $400.

Gateway has several other models and configurations available, including Pentium-based systems; all can be ordered with CD-ROM drives and sound cards installed. Contact Gateway for additional information.

Additionally, Gateway offers a Multimedia Upgrade Kit ($395) which consists of an internal-mount CD-ROM drive, a Sound Blaster 16-ASP, and a pair of Labtec CS-180 amplified speakers. Again, for additional info and specs, contact Gateway.

Path 3: Build It Yourself

The Most Difficult Path Is Often the Most Satsifying

Some folks, myself included, have particular wants and/or needs that simply can't be filled by off-the-shelf items or factory

configurations. If you're one of these people, and you aren't afraid to roll up your sleeves and pick up a screwdriver, this may be the best approach. A few cautionary words are in order here, however. If you don't have a good working knowledge of computer components and aren't comfortable working with static-sensitive devices, don't build a system for yourself — buy one instead and save yourself lots of grief and frustration. However, if you're a stalwart soul, here's some sage advice just for you:

1. Don't be penny-wise and dollar-foolish. What this means, simply, is that a better quality component, although slightly more expensive, is a much better value in the long run when it comes to dependability and long-term performance. This is especially true of motherboards. Since the motherboard is the heart of a computer, don't skimp by buying a no-name board with an off-brand BIOS. My personal choice is a premium-grade motherboard from companies like Mylex or American Megatrends. The construction and components used on these boards is top quality.

2. Think of tomorrow's needs today. Remember when you thought that new 286 system you bought was the best thing since sliced bread? Computer technology changes so rapidly that you must think of what you'll want to expand or upgrade to in the near future. Some guidelines to follow: Look for a motherboard that permits CPU upgrading; select a motherboard and case with ample expansion slots; make sure the power supply is beefy enough to handle all the goodies you'll be stuffing into the box (200-watt minimum).

3. Go for high-quality peripherals. Again, don't be miserly or you'll usually be less than delighted with the outcome. When selecting a CD-ROM drive, choose a fast model with high transfer rates and low access times rather than a middle-of-the-road drive (which might be enticing just because it comes with a lot of software). The same is true for a sound card — get one you can grow into.

4. Shop around. First decide on the components you want to use to build your system, then shop via the phone or magazine ads to get the best pricing on the exact items you want (don't compromise, and be sure you're not comparing apples to oranges). Since tech support probably isn't going to be a big deal to you if you're putting it all together yourself, mail-order electronics supply houses may have the best prices as opposed to traditional computer dealers.

5. Have fun. Nobody says that you can't enjoy putting a system together, and the sense of accomplishment you'll have when you turn it on and it all works is a real kick you'll enjoy many times over — especially when you point to the PC with pride and tell folks "I built this one myself."

When selecting a CD-ROM drive, choose a fast model with high transfer rates and low access times rather than a middle-of-the-road drive which might be enticing because it comes with a lot of software.

In case you're wondering, here's the configuration of my system (yes, I built it myself): Mylex motherboard, AMI bios, 80486DX/50MHz CPU, 32MB RAM, one 3.5-inch and one 5.25-inch floppy drive, 170MB hard drive, 128MB SCSI magnetic/optical drive, .5GB SCSI hard drive, NEC CDR-84 Multispin CD-ROM drive, an Antex Z1 16-bit audio card with ZWave daughterboard (32-voice Ensoniq synthesizer with 4MB wavetable RAM), Digital Vision RT Pro video digitizer board, Renoir Ultra SVGA 1MB (hi-color) Tseng 4000-based video adapter, Trantor T-128 SCSI interface card, Labtec CS-150 amplified speakers, ViewSonic 7 17-inch SVGA monitor, and Microsoft serial mouse.

By the time you read this, I'll probably have upgraded to a Pentium-based motherboard, a Pioneer DRM-604X Quad-Speed 6-disc multichanger CD-ROM drive, and some other goodies, including Sigma Designs' ReelMagic video card.

The nature of computing is change. And so, your system is never fully finished, and the end of the path is never in sight. Enjoy your journey.

Tom Benford is the founder and president of Computer Product Testing Services Inc., an independent testing and evaluations lab based in Manasquan, NJ. He is also the author of Welcome To...CD-ROM (MIS:Press, 1993, $19.95) and Welcome To...PC Sound, Music and MIDI (MIS:Press, 1993, $29.95).

Hardware Vendor Info

AST Research, Alton Parkway, Irvine, CA 92718 (714) 727-7977
Creative Labs, 1901 McCarthy Blvd., Milpitas,CA 95035 (408) 428-6600
Dell Computer Corp., 9505 Arboretum Blvd., Austin, TX 78759-7299 (512) 728-8499
Gateway 2000, Gateway Dr., North Sioux City, SD 57049 (605) 232-2000
Media Vision, 3185 Laurelview Ct., Fremont, CA 94538 (800) 845-5870
Sony Computer Peripheral Products, 3300 Zanker Rd., San Jose, CA 95134 (800) 352-7669
Tandy Corporation, 1500 One Tandy Center, Fort Worth, TX, 76102 (817) 390-3300

Getting Started with Photo CD *Part 2: The Digital Canvas*

Charles Brannon

Computer enthusiasts aren't content to look at a photo on the screen. At the very least, we want to use it as clip art or wallpaper. Better yet, we want to edit the image with our favorite paint program and put a curly mustache and sunglasses on Aunt Edna, or to make those swimsuit pictures more decent by adding more clothing, for goodness sake!

You need a way to convert the Kodak-specific PCD format before you can use it with most software, although the great majority of new paint and DTP programs can directly read or import Photo CD images. Kodak provides *Photo CD Access*, a simple way to view, scroll through, flip, rotate, and save in popular image formats. You can view a contact sheet consisting of BASE/16 thumbnails to easily choose your picture. *Kodak PhotoEdge* offers a little more: filters for sharpening, smoothing, tracing, or inverting a picture, and real controls for adjusting color balance, brightness, and contrast. It lets you convert the image down to 256 colors or less, or to black-and-white shades of gray.

Kodak also offers a more sophisticated image editor, *Renaissance*, but it was not received in time to be evaluated here. (Descriptions of *Renaissance* place it in the category of other powerful packages, such as *Adobe Photoshop*.) *Kodak Shoebox* helps you keep track of all your photos and their location (even if they're not Photo CD images) by storing a catalog of thumbnails on your hard drive. All Kodak products are or will be available in both Macintosh and Windows versions.

We have tested support for Photo CD in several paint and DTP programs. The new version of *PageMaker 5.0* directly imports Photo CD. Corel's *PhotoPaint* (based on Zsoft's *PhotoFinish*) was one of the first programs to read Photo CD. Micrografx has two Windows paint products that read Photo CD: *Picture Publisher* and its junior partner, *Photo Magic*. Adobe's Macintosh and Windows versions of *PhotoShop* also handle the format.

For an inexpensive way to view and convert Photo CD, download *Paint Shop Pro 2.0* (for Windows), available from

Sure, your Photo CD pictures look great on your monitor — but that's only the beginning. Here's how you can REALLY have some fun.

most major online services and from many BBS's. It reads Photo CD, lets you adjust contrast, brightness, and colors; apply special-effect filters as powerful as those found in the most expensive paint programs; then convert the image to any of 20 formats. It's not a paint program, but it's a great way to manipulate images. The registered version of Paint Shop Pro is available from JASC for $69, plus $5 shipping and handling.

Where's the Proof?

Before we dive into image editing, ask yourself what you're going to do with the altered image. You can take your original Photo CD disc back to the developer and get new prints made at any time, but most photofinishers will cringe if you hand them a 3.5" floppy. You'll need to rely on local specialists (such as service bureaus) if you really want photographic reproductions of your edited art. Using slide or film recorders, these services can turn digital bits back into silver, which can then be developed into prints. Another approach is to take your Postscript files to a service bureau equipped with a Canon CLC 500 color laser copier/printer. These experts will freely give you the benefit of their expertise, even if you're not a big commercial customer.

Some businesses have their own 300-dpi color proofing printers utilizing thermal wax transfer, dye sublimation, or solid inkjet technology for near-photographic printing (see Figure 2). Even a personal color inkjet printer (Figure 1) may be acceptable for some purposes. But all these methods are expensive, ranging from 25 cents a page for an inkjet to $12 a page for color laser, or considerably higher for true photographs made from a film recorder.

Today, most magazines compose all text, and scan or merge all art and photographs, using powerful personal computers. The software creates the cyan, magenta, yellow, and black separations, which are then used by printers to make the four plates used for printing. No photograph is necessary as an intermediate. This is true whenever the final output device is controlled by the computer: no photograph is required.

And of course a great many images are now created solely for viewing on screen or television, often in multimedia productions. Full 24-bit color is available in all its glory, without being muddied up by the impurities found in printed inks. Kodak's Picture Exchange relies on Photo CD as a source for thousands of stock photographs. Companies like Corel are also getting into the act with their own extensive libraries.

COMPARE!

Figure 1. Even a low-cost color inkjet can produce attractive photographic art.

Figure 2. Sharp results from a 300-dpi color proofing printer.

Figure 3. A Photo CD image, treated here as a photograph.

Let's Get Warped

We won't pick on poor Aunt Edna, but I will show you a practical use of photo retouching, and other more whimsical ones. We'll also get warped with some morphing software. (And thanks to my friends, relatives, and colleagues who agreed to take part in this experiment.)

A common problem with photography is photos that are underexposed or overexposed. The wrong kind of lighting can also lead to color problems, such as magenta

fleshtones. To some extent, these can be corrected with image-editing software. Some can be handled with programs like *PaintShop Pro* or *Kodak PhotoEdge*, which affect the whole image. Some flaws, however, require hand retouching with programs such as *Adobe PhotoShop* or Micrographx' *Picture Publisher*. And these techniques can be replicated with lower-cost software such as Micrografx' *PhotoMagic* and Corel's *PhotoPaint* or Zsoft's *PhotoFinish*.

Figure 4 shows you the original image of my friend De, taken from the PhotoCD, at BASE resolution. It's off-color, underexposed, and washed out. Fortunately, this is easy to correct.

Both *PhotoShop* and *Picture Publisher* have a convenient way to preview the same image at various color shifts and in darker or lighter tones (see Figure 5). I simply pick a brighter version, then a version with better fleshtones. I then enhance the shadows and highlights. Other improvements include use of the sharpen filter to bring out detail in the hair, then selective softening with the blur tool to minimize facial lines. After all these touchups, you get Figure 6.

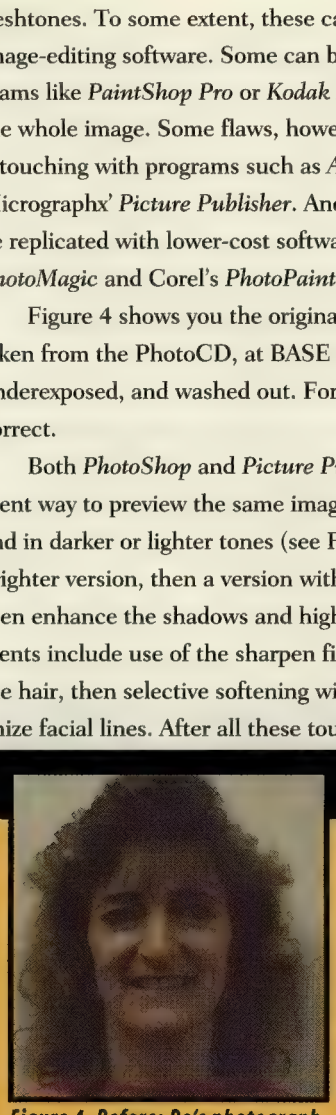

Figure 4. Before: De's photograph is too dark and off-color.

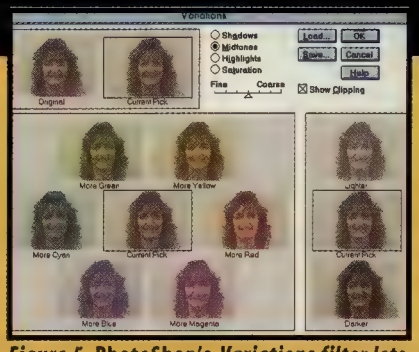

Figure 5. PhotoShop's Variations filter lets you preview different color, brightness, and contrast options.

Figure 6. After. The photograph is much improved. Smoothing is applied to allow a softer glow.

Figure 7 (left and below). The clone tool copies skin tones on top of the mustache. Here I have only moderate success.

Figure 8 (left and below). This is how he's supposed to look, courtesy of CD-ROM Today's art staff....

A Close Shave

My friend Kevin was thinking about shaving off his mustache. Since his wife had never seen him without it, he wanted to show her how he'd look without actually committing the razor. I've always thought this type of retouching was the domain of real artists, but I agreed to try. My first attempt was hopelessly crude, as I painted over the mustache with a flesh-colored paintbrush. Skin is composed of a texture of flesh colors, so I next tried painting with a mask (a selected region) taken from another skin area. This was better, but it textures still looked fake.

Finally, I realized that cloning would work best. The clone tool copies pixels from a source region (whatever the "clone brush" passes over) to another (the location of the paintbrush). The clone brush moves in tandem with the paintbrush. While cloning, you can easily change the location of the clone brush, in case it's about to pass over undesired source regions. It's easy to demonstrate.

Figure 7 shows me getting started. I've positioned the clone brush over some skin that I think would look right under Kevin's lip, and have started painting by dragging the paintbrush. I'm trying to create an upper lip for him by cloning parts of the lower lip. The lip is not too realistic, but the photo gives some indication of how Kevin would look sans mustache. To see how realistic this can look when professionally rendered, see Figure 8, retouched entirely by the art staff at *CD-ROM Today*. (By the way, Kevin's wife encouraged him to keep his lip covered.)

Peculiar Transformations

As personal computers catch up with the power of workstations, we're benefiting from the trickle-down of powerful graphics software, such as morphing tools. Morphing (as in "metamorphosis") is prominent in the special effects used in movies like *Terminator* 2, television commercials, or music videos (like Michael Jackson's "Black and White"). Gryphon Software pioneered morphing on the Macintosh with *Morph*, and now it's also available for Windows. You can try morphing for free with the shareware "WinMorph" (registered version $69 from Fernando Messeder, POB 70104, Rio De Janeiro, Brazil 22422.970).

Figure 9. Kevin's features have been outlined, and are being adjusted on my dad's face.

We've been working with a powerful new package for Windows from HSC called *Digital Morph*, the most powerful morphing tool yet. Photo CD is a perfect complement to morphing software, since it provides quality images that you can take an interest in. Ever wonder what Aunt Edna would look like as she's gradually mutated into the image of your cousin Billy Bob? Ever wonder if this is what computers were really invented for?

Figure 9 shows how I outlined the facial features of Kevin, then mapped them onto a photograph of my Dad. I

Figure 10. The mid-point in the morph (the seventh frame) possesses an eerie dualism.

Figure 11. Somewhat peculiar — my nephew Jim becomes my pet cat Poufi!

then repositioned and reshaped the outlines to fit the different countours on my father's face. The seventh frame in Figure 10 shows the midpoint of the transformation, and it's eerie. As you stare at it, you think you see one person, then another, like an optical illusion. Using similar images is more realistic, but as long as there are some features in common, you can morph between any images you like, no matter how strange.

Obviously we can't demonstrate animation in print (at least in this decade), but the miniature filmstrips in Figures 10 and 11 let you see a multi-frame transition. If you cut them out and flipped through them, you'd get a sense of the fluidity of the morphing process. Better yet, make your own Photo CD and see for yourself!

Charles Brannon has been programming and writing about computers since 1978. Based in Greensboro, NC, he is working as a network supervisor and freelance writer.

Photo CD Resources

Eastman Kodak Company, 343 State St., Rochester NY 14650 (800) 242-2424
Adobe, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039 (415) 961-4400
Corel, 1600 Carling Ave., Ottawa, Ontario CAN K1Z8R7 (613) 728-8200
HSC Software, 1661 Lincoln Blvd. , Suite 101, Santa Monica, CA 90404 (310) 392-8441
JASC, 10901 Red Circle Dr., Suite 340, Minnetonka, MN 55343
Micrografx, 1303 Arapaho, Richardson, TX 7508 1 (214) 234-1769

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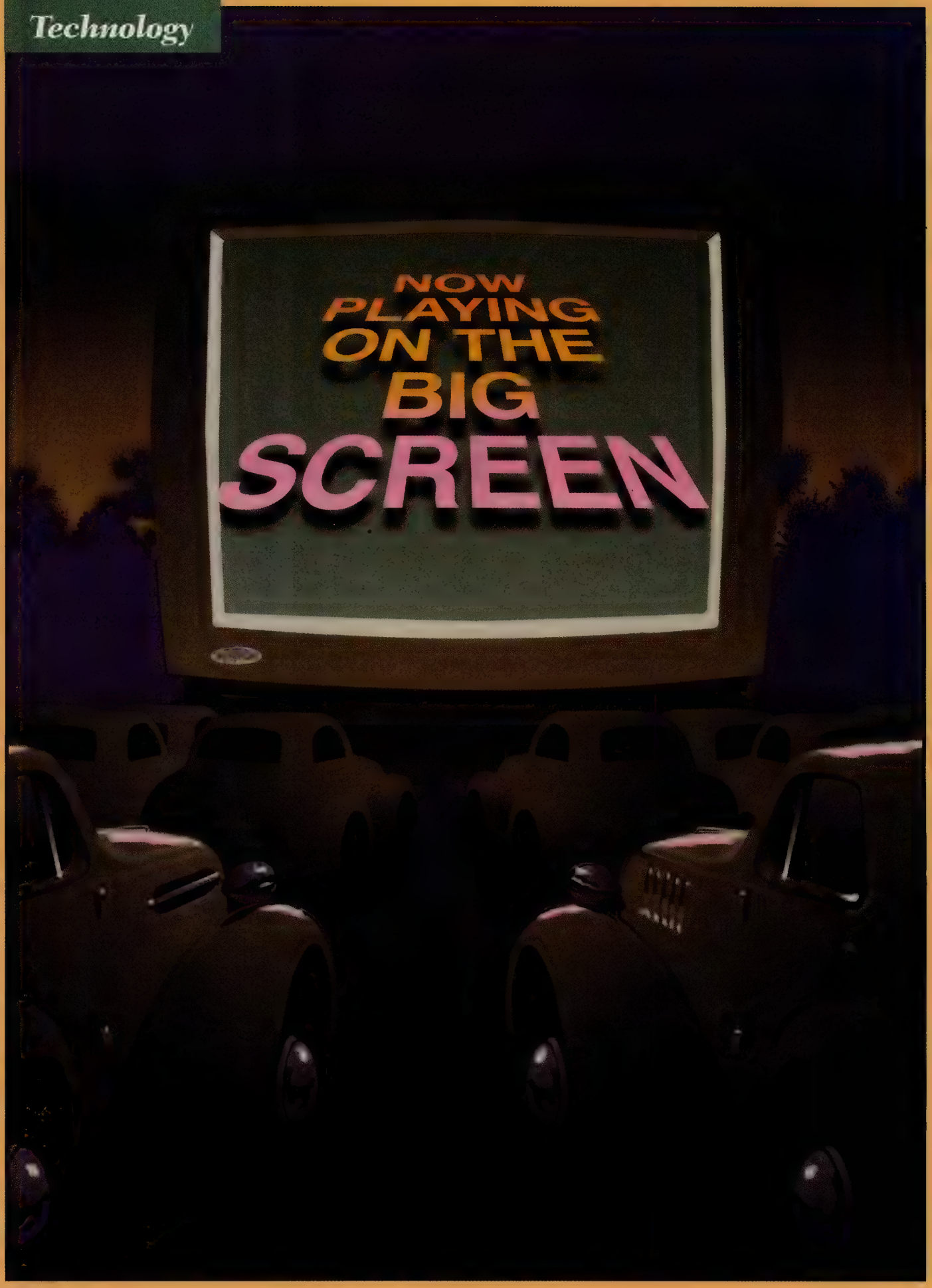
NOW
PLAYING
ON THE
BIG
SCREEN

PC Video: The Next Level

Tim Victor

Thanks to ReelMagic, PC users can now have full-screen, full-motion video. But it's not *quite* that simple....

With the December 1993 introduction of the ReelMagic video playback board, an affordable MPEG I adapter for IBM-compatibles, Sigma Designs has broken new ground in the multimedia world. But a board like this is only as good as the software that supports it, and Sigma Designs is counting on MPEG versions of popular multimedia programs to unleash ReelMagic's spectacular sights and sounds in interactive applications. The board we received came bundled with a copy of Readysoft's *Dragon's Lair*. MPEG versions of *Compton's Interactive Encyclopedia* and *Return To Zork* were expected to become avaialable by mid-January, and other titles from Aris Entertainment, Access Softek, and Sierra should be ready shortly.

ReelMagic adds full-motion, full-color video playback to almost any PC with a CD-ROM drive, and includes software to play VideoCDs (ordinary feature films on CD-ROM). With the recently established "White Book" VideoCD standard, movie studios can release a single disc that will play on any company's MPEG player, including CD-I and 3DO multiplayers (equipped with optional full-motion video adapters) and video-enhanced CD players, due this year from major electronics manufacturers.

What MPEG Delivers

Developed by the International Standards Organization's Moving Picture Experts Group, the MPEG I digital video standard appeared at the end of 1991. Most importantly, MPEG minimizes the amount of memory needed for each second of video by using sophisticated video compression algorithms. It lets a single CD hold as much as 74 minutes of VCR-quality video, at a 150K byte-per-second data rate that's compatible with ordinary single-speed CD-ROM drives. (MPEG II is nearly complete, but it deals with much higher data rates for applications like digital cable TV.)

MPEG I has a standard image size of 352 x 240 pixels, with frame rates up to 30 frames per second, 15-bit color, and CD-quality sound. But the high-powered techniques that deliver this level of quality have also kept MPEG off our desktops — few PCs have the power needed to play MPEG video at full speed. Instead, most CD-ROM video clips use Microsoft's Video for Windows or Apple's QuickTime system, software-only formats that rely on the power of the computer's CPU. With less aggressive data compression, these software formats don't need special hardware to decode or display video, but their smaller windows, lower frame rates, and more modest audio yield a significantly less satisfactory result than you get with MPEG.

While software video systems need powerful CPUs and

fast graphics adapters, the ReelMagic MPEG adapter's requirements are fairly simple. That's one big advantage of a hardware solution: the board bears all the burden of video playback, delivering top performance even in a modestly appointed PC. All it takes is an AT bus-based PC with a 16 MHz 386SX, 2MB of RAM, 2MB of free hard-drive space, and a CD-ROM drive. Any VGA or SVGA graphics card will work as long as it has a *feature connector* (most graphics cards do), an extra port that ReelMagic needs to overlay its video on the card's output.

Software Tweaks

ReelMagic's circuitry handles almost the entire playback process, separating and decompressing both audio and video bitstreams, and rescaling each 352 x 240 image to the window's size. It mixes in video from the PC's graphics card for windowed video on a single monitor, which it drives through a standard VGA jack. The 16-bit stereo audio output also works as a Sound Blaster-compatible sound card, but to keep ReelMagic's price in check, Sigma Designs omitted features not strictly needed for MPEG playback. It doesn't capture video, there are no audio inputs or MIDI ports, and it can encode, but not decode, MPEG I video.

While the board installs easily, the software side is a bit trickier. With support for both DOS and Windows applications (during Fall COMDEX, Radius announced that it was licensing Sigma's technology for use on the Macintosh), ReelMagic's setup program modifies nearly every configuration file on the system, and each change offers another chance for problems. Our early production version got most of the changes right, but it took some manual fine-tuning to get the memory management back into shape. Some more determined tinkering was needed when a bug ate Windows' Program Manager's "Main" program group, home to important tools like File Manager and Control Panel. With the complex configuration files on today's PCs, setup problems are unfortunately common. But still, ReelMagic's software installation needs some work.

MPEG's unique strengths and weaknesses give ReelMagic video a very different look from any analog format. The clean pictures avoid ghosting, drop-outs, and synchronization problems that nag VCRs, and MPEG seems capable of brighter, sharper colors than tape. But there's no escaping the basic 352 x 240 images. Though ReelMagic scales up each frame to fit any window size, including full-screen, small blocks in the picture betray the original resolution. You might also find occasional artifacts of MPEG I compression, such as a jagged, grainy texture that sometimes

ReelMagic is impressive, but it still has to clear some tall hurdles — and gain more software support.

appears in shadows and darker parts of an image. But on the whole, a well-transferred MPEG video can look at least as good as VHS tape, good enough for multimedia applications or everyday movie-watching.

What Are Its Chances?

The ReelMagic card is an impressive piece of hardware, with a reasonable initial list price of $449. But if it's to become an established component of the multimedia platform, it has some tall hurdles to clear. Most importantly, it needs more software support. A dozen or so publishers have announced plans to develop ReelMagic software, and a handful of titles were expected to ship concurrently with the board, but at this writing we couldn't find a single copy of a finished program to try out. Even the copy of *Dragon's Lair* packaged with our board was clearly a test version, displaying joystick diagnostics on top of game screens.

New developments could also threaten the future of ReelMagic. The MPEG I standard is already two years old, a very long time by today's digital technology standards, and new video compression algorithms are constantly being developed. A newer, more efficient algorithm could steal whatever momentum MPEG has built up. Even if MPEG does prevail, a simpler decoding method could appear. PC power is increasing rapidly, and new processors like the Pentium and PowerPC, or general-

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purpose digital signal processing (DSP) chips found on some newer sound cards might eventually make hardware MPEG adapters irrelevant.

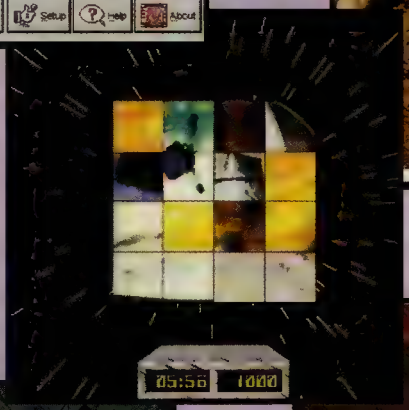
Still, ReelMagic shows a great deal of promise, and Sigma Designs certainly has the technical and marketing skills to promote the board and continue its development. While its success ultimately depends on support from software publishers, there's no doubt that ReelMagic has brought PC video to the next plateau.

Tim Victor is a technology enthusiast who has worked as a programmer and writer for Compute Publications, and as a graphics programmer for Hanna-Barbera Productions. He currently resides in Greensboro, NC.

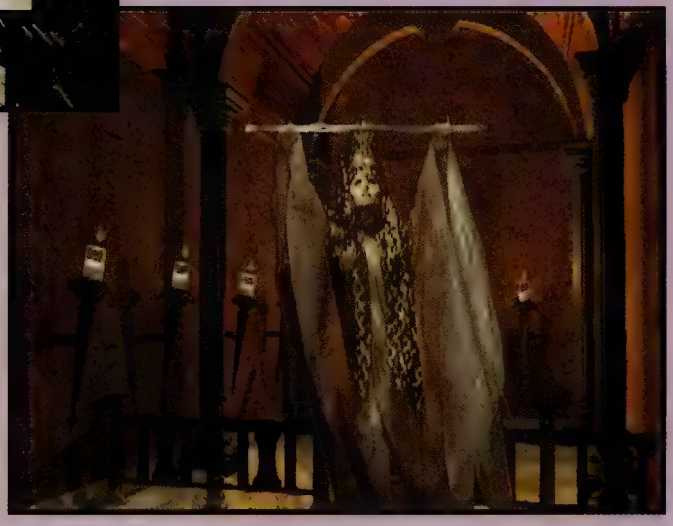
Holding Your Cards

ReelMagic generates full-motion MPEG video, but it doesn't replace your PC's normal video card. Program screens still come from the graphics card, and ReelMagic's overlay circuitry combines the two video sources on a single monitor. In terms of audio, ReelMagic can act as a 16-bit Sound Blaster-compatible sound card or it can co-exist with another sound card, which can offer features that ReelMagic lacks, such as sound inputs and MIDI ports.

FULL-SCREEN FEVER



***First in support of Reel Magic: (Clockwise from top right) Aris'* Animal Kingdom; *Activision's* Return to Zork; *ReadySoft's* Dragon's Lair; *Access Softek's* Matinee; *and Aris'* Video Cube: Space.**



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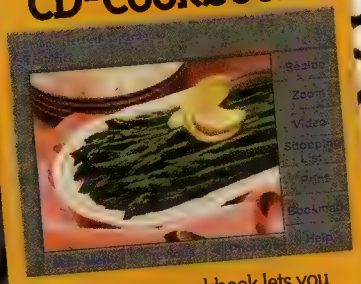

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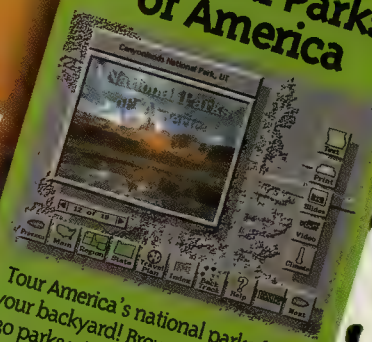

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3DO: After the Hype

Trip Hawkins envisioned a new reality... now can he realize his vision?

— Vince Matthews & Phill Powell

When Trip Hawkins and company unveiled 3DO at the Summer 1993 Consumer Electronics Show in Chicago, the former firebrand of Electronic Arts wowed an industry difficult to impress.

The reasons? His plug 'n' play CD-based machine promised something for all family members (not just young gamers), everything from playing audio CDs to accessing network services to eventually running feature-length films. This was big talk indeed, but Hawkins' machine appeared to have the technical power to back it up.

This same strength set the electronic entertainment industry — Wall Street, too — on fire with excitement. If Hawkins was able to deliver 3DO as advertised, the machine would churn with 50 times the graphics and animation power of 16-bit systems, absolutely swamping the established gaming field. Additionally, 3DO promised other positives: enhanced image control (increased scaling and rotation), more displayed colors, and CD-quality sound.

3DO was able to tempt potential developers with creative freedom that Nintendo and Sega would never have condoned. The start-up company wooed software publishers and developers with assurances that they could create as many titles as they wished, about any subjects they wanted, and render them as they pleased. Just as alluring was the negligible cost of the developing license: a few hundred dollars was the sole cost of admission. Furthermore, 3DO developers don't have to compete with products from The 3DO Company — unlike Nintendo and Sega, 3DO isn't generating its own software.

Like Santa Claus, Trip Hawkins seemed to have something for everybody. And, like Santa Claus, some people doubted he was for real.

Troubles in Paradise

Although the 3DO debut was a major highlight at Summer CES, Hawkins and company still had a long way to go before bringing their machine to market. After all, announcing a new system is vastly easier than perfecting a prototype and entering mass production. At CES, no fully operational player was ready for inspection. Game demos were running on Macintosh Quadras, and even the playable demos were hard to control and tended to crash regularly.

As autumn arrived, industry voices wondered aloud whether Panasonic would be able to produce the FZ-1, the first 3DO multiplayer, in time for the already-promised October ship date. Beyond that, however, another red flag was waving: would any software be ready?

Although some software publishers had thrown their hats into the 3DO development ring, only a fraction of them were actively designing software for the machine. Many were (and are) taking a wait-and-see approach. An even smaller number of the 20 products planned for the crucial Christmas season actually made their way to store shelves. This produced two detrimental effects: 1) consumers saw a system with

Cutting up with Don Bluth's Dragon's Lair, *from ReadySoft.*

Animation Stations

The 3DO machine uses two animation processors that organize graphic instructions. The animation "engines" display and move 64 million pixels per second (compared to an average one million pixels per second for standard 16-bit systems). These processors can perform a number of functions on full-color images: rotating, scaling, wrapping, warping, lightshading, and mapping (on texture grids). Plus, with 3DO's Cinematic Software Tools, images can be portrayed transparently, with their shapes defined only by outlines. Additionally, standard polygon images (used in *Alone in the Dark* and *StarFox*) are generated with astonishing speed via the 3DO's RISC architecture.

The DMA Molecule

The DMA (or Direct Memory Access) engine is one of 3DO's most impressive features. Because of DMA, hefty chunks of data can be moved around within its three megabytes of memory — without using the CPU. Although some 16-bit systems can also accomplish this, they can't match 3DO's processing speed. In fact, 3DO's DMA engine can move data at speeds up to *20 times* faster than 16-bit technology.

Ports of Call

In addition to the expansion port, used for hardware upgrades, the 3DO machine features an RF port, an S-VHS port, composite video port, and standard RCA audio outputs for full stereo sound.
Coming Attraction: The machine's right side houses an AV Expansion slot. By using a plug-in FMV module, the 3DO unit will play Digital Video CDs.

Resolutely 3DO

3DO claims to have a 640 x 480 pixel resolution, but this isn't exactly true. The 3DO is actually limited to a 320 x 240 video memory but compensates by creating a 640 x 480 appearance. It does this by comparing adjacent pixels (both horizontally and vertically), averaging the pixels' colors, and producing a new pixel. This "averaged pixel" sits between the two original pixels. For example, if you have neighboring black and white pixels, the new creation would be grey. Of course, this doesn't make for a truly high-resolution screen, but at least 3DO is able to deliver smoother gradations of color. Bonus: 3DO can interweave two separate graphics to create a stereo image, for use in 3D effects. The glasses that will be used with this technology are supposedly on the way.

Sounds Like a Winner

The 3DO machine is compatible with audio CDs. As an added plus, there's a fractalish kaleidoscope program that's easily accessible while you're playing audio CDs.

Daydream Believer?

Trip Hawkins has been shaping the 3DO concept for a long time. In fact, you might even say he's taken his entire life to prepare for it. As a Harvard freshman, Hawkins created his own major — Strategy and Applied Game Theory. In 1978, he joined an upstart electronics outfit known as Apple Computer. (Hawkins was the 68th employee hired.) Four successful years later, he left Apple to launch his own software publishing company. That brainchild, Electronic Arts, now regularly grosses in excess of $200 million a year. In 1990, Hawkins, left EA to start 3DO. As president and founder of The 3DO Company, he almost singlehandedly engineered financial backing for the company (no small feat) — enlisting the aide of corporate giants like AT&T, Time Warner, and MCA. He even used Hollywood producer/mogul Steven Speilberg's endorsement when he pitched the 3DO concept to Matsushita Electronics. They bought in, too. The 3DO Company, the second enterprise founded by Trip Hawkins, was valued at $300 million...before it created a single product.

few dedicated titles; and 2) software developers, watching each other, remained skittish and stayed out of what they considered risky waters.

Maybe 3DO's biggest problem was (and is) its price tag, weighing in at a hefty $700. Trip Hawkins forecasted an eventual price reduction (perhaps down to $500, if other manufacturers build multiplayers and competition pushes unit prices downward) but that will happen only if other hardware manufacturers smell success and get behind the 3DO platform. And that means the first half million multiplayers need to sell reasonably well.

Digital shoot-'em-up: American Laser Games' Mad Dog McCree.

The Machine

Panasonic's REAL (Realistic Entertainment Active Learning) 3DO machine hides its 32-bit RISC (Reduced Instruction Set Computer) processor inside a gray square

3DO Cavalcade

The following list includes some 3DO titles already available for the machine. The vast majority, however, are products in development, which are subject to change.

American Laser Games
Mad Dog McCree
Who Shot Johnny Rock?
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Syndicate
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Crystal Dynamics
Eclipse
The Horde
Dynamix
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Stellar Seven
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Peter Pan
PGA Tour Golf
Road Rash
Shock Wave
Twisted
Worldbuilders, Inc.
Zombie World
GameTek
Air Warrior
Humongous
Fatty Bear's Birthday Surprise
Fatty Bear's Fun Pack
Putt-Putt Goes to the Moon
Putt-Putt Joins the Parade
Putt-Putt's Fun Pack
Intellimedia Sports
Intelliplay Baseball
Intelliplay Football
Intelliplay Cowboy Casino
Interplay
Battlechess
Out of this World
MCA
Jurassic Park Interactive
Universal Studios Orbital
MicroProse
C.P.U. Bach
Origin
Super Wing Commander
Park Place Productions
3D Adventures
3D Football
Psygnosis
Lemmings
Microcosm
ReadySoft
Dragon's Lair
Sanctuary Woods
Shelley Duvall's It's A Bird's Life
Software Toolworks
The Animals!
Dragon Tales
MegaRace
Oceans Below
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Trilobyte
The Seventh Guest Part II: The 11th Hour
Virgin
Demolition Man
7th Guest - Part II

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– PC Magazine, November, 1993

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– Computer Monthly Direct, October, 1993

"[SST] is designed to be so easy to use that [the company] is offering a full refund if you can't create a presentation within one hour of installing it. Now that's confidence, or stupidity, or something - but as it turns out it is very simple to use."
– Computer Monthly Direct, October, 1993

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shell, with an architecture more similar to a high-end laserdisc player than a $200 VCR. 3DO's most spectacular claim is that the machine is *50 times* faster than conventional

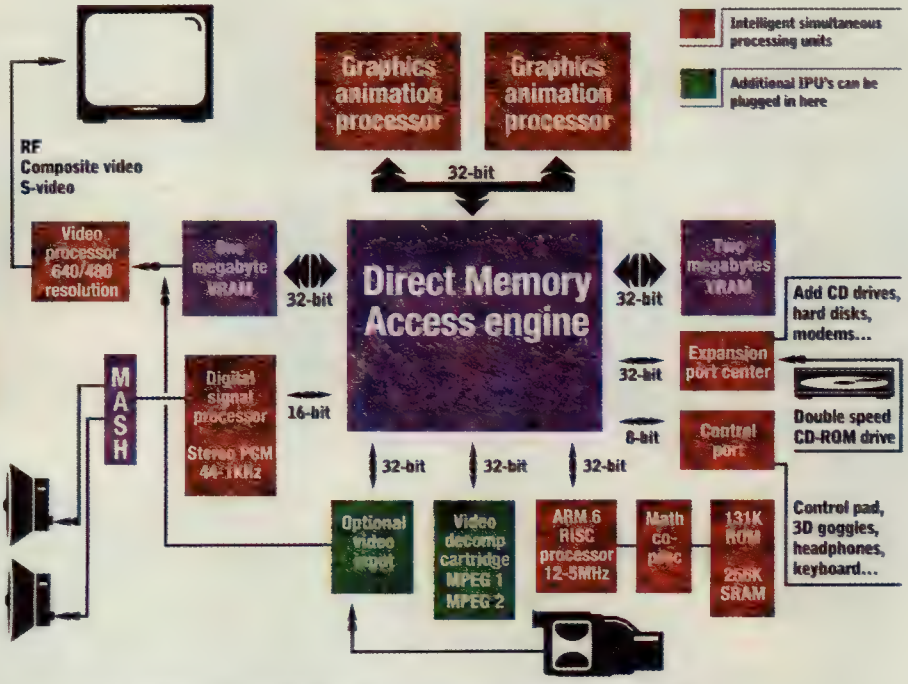
***Santuary Woods' first 3DO offering is* Shelley Duvall's It's a Bird's Life.**

16-bit systems, although some of the spec numbers don't seem to add up that way. Still, there's no denying that 3DO has plenty of amazing hardware and operates in some extraordinary ways.

Developing the Future

3DO makes an entire library of programming tools available to its licensees. Within the Content Library, 3DO has assembled some 20,000 sound effects, over 60 hours of music, 10,000 still photographs, a variety of film footage, 500 texture effects, and 350 megabytes of clip art, all free of licensing fees. 3DO is expanding this library so developers can concentrate on programming, rather than spending time fishing for specific pieces of content.

***Vanishing Point: Electronic Arts'* Road Rash.**



3DO's Direct Memory Access Engine provides lightning-quick data movement.

Big Plans, Big Questions

Most of 3DO's problems up to now have been of the short-term variety. "Will the machines ship on schedule?" They did. "Will there be sufficient software for the platform?" There will. The Big Question, however, is whether consumers will find a compelling reason to purchase these expensive machines.

With that in mind, it's important to remember that 3DO isn't just the name of a new game machine, or a new hi-tech company. Like VHS or Dolby, 3DO is a proposed standard. And this indicates that The 3DO Company, blessed with plentiful financial backing, is in for the long haul. Panasonic's 3DO player is simply number one in a series of interactive-multiplayers. At least, that's what Hawkins and company are counting on.

The plan is that once the Digital Information Highway begins moving, 3DO will be in place with easily adaptable technology. Everything will gravitate to and through the gates of 3DO. If Hawkins is right about this, the ultimate rewards for 3DO could be staggering — to the tune of $17 billion.

If this seems like a stretch, remember that VHS didn't become a standard overnight. It didn't rule the videotape market until Sony constricted use of its superior Betamax format, thus driving manufacturers toward friendlier pastures.

This lesson isn't lost on The 3DO Company, which has added some 100 new licensees since the October launch. Hawkins realizes that standards aren't created suddenly or in a vacuum; he needs widespread support from other members of the electronics industry, as well as consumers, before 3DO can become a household item...and a household word.

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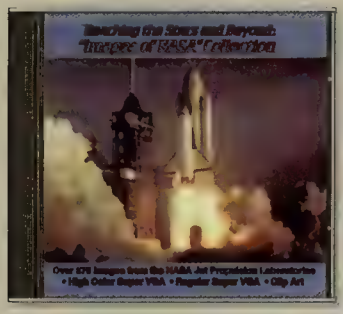

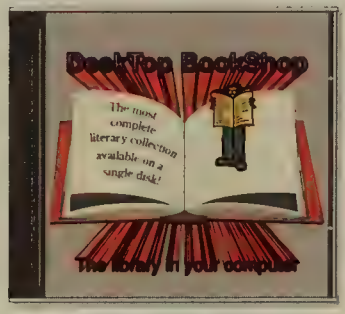

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The Shareware Salvo

10 CD-ROMs You Don't Want to Miss

David A. Wade

Shareware on CD-ROM is arriving faster than you can load it. Here are ten sure-fire collections for the PC.

Shareware is one of the hottest areas of the CD-ROM market today. It's not difficult to figure out why. In the past, shopping for shareware meant peering at badly mimeographed listings and then sending off your money in the vague hope that something might prove useful, or browsing around a bulletin-board system trying to figure out arcane DOS filenames. But now CD-ROMs offer the ideal means of delivery for the cornucopia of try-before-you-buy programs. CD-ROMs are safe, efficient, and very, very cheap. They're safe because all the reputable shareware suppliers guarantee that their CD-ROMs are completely virus-free. They're efficiently delivered — you don't have to tie up the telephone line for hours downloading from some faraway board. And inexpensive: on most well-packed shareware CD-ROMs, you pay less than a penny a program.

I've waded through nearly 30 recent offerings to winnow out a top 10 list of unofficial "award winners" -- in general, Windows, DOS, and several specialist categories -- each of which deserves your attention. But before getting to the finalists, let's dispel three myths about shareware.

Myth #1: *Shareware filled an interesting niche in the early days of computing, but there's no place for it with today's complex interfaces.* In fact, it's now needed more than ever. Innovations in the shareware market tend to trickle up into the commercial arena: nearly everything from 3-D spreadsheets to fishing simulations made its debut as shareware quite some time before any large publishers got into the act.

Myth #2: *Shareware is OK, but it can't compete with the top commercial products.* Wrong. Many shareware authors are producing state-of-the-art applications and utilities. For instance, every round-up of PIMs (Personal Information Managers) I've seen discusses the same seven or eight commercially available packages, but the simplest, slickest Windows' PIM surely has to be *Time & Chaos* (TCHA04.ZIP on the CICA MS Windows CD-ROM, covered later in this article). And to date, none of the major players has yet produced a text editor that, on a features-per-kilobyte basis, rivals Eric Meyer's miniature masterpiece, *Visual Display Editor* (VDE17B.ZIP on Night Owl #10, also covered later).

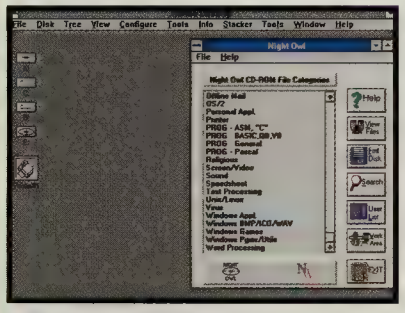
Myth #3: *Shareware is free.* No, it isn't. Just because you paid for the CD-ROM doesn't mean that you're the legitimate owner of all the programs contained on it. You have, in effect, purchased a sampler that gives you the opportunity to test drive anything that strikes your fancy. But if you like a program enough to add it to your permanent collection, then you must register it with the author/owner of that product. After all, fair's fair. Nearly all of us are guilty of subscribing to the myth that shareware is

3 Myths About Shareware

1. It's Not Useful in Today's Sophisticated Market.
2. Shareware Can't Compete with Top Commercial Products.
3. It's Free.

Night Owl #10
Night Owl
$39-$59; (716) 484-3066

The Night Owl collection is the hands-down, overall winner — better even than the uniformly commendable PC-SIG collections. There's a new Night Owl disk issued every four months (number 11 should be available about the time you're reading this). But don't worry which one you get since they make every effort to ensure that there are

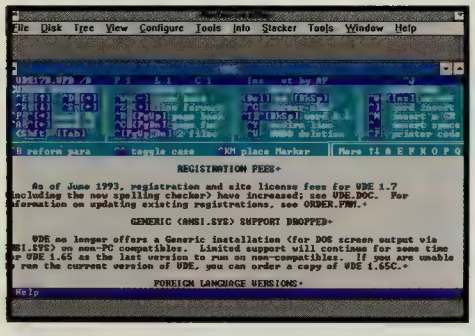


Night Owl #10, a treasure trove of recent shareware, has an outstanding front end.

no programs duplicated on subsequent disks, unless the author has made a substantial revision or upgrade. The front end has continued to evolve and improve with each new offering, and now includes program descriptions and vital statistics along with several handy user tools. This shareware smorgasbord sets the standards for variety and freshness against which all the others must be measured.

Software Vault: The Gold Collection
American Databankers Corp. $35-$50; (918) 497-1201

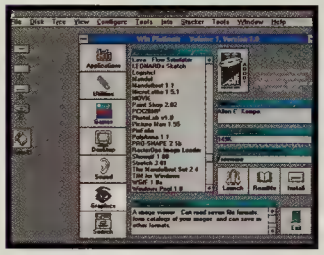
There's no prize here for installing 8.5 megabytes of housekeeping files, but look beyond that and you'll find that this collection not only embraces an extremely wide range of worthwhile software (nearly 6000 files in 60 categories), but also includes several areas of up-to-the-minute texts: Internet FAQs, RFCs, as well as electronic books and magazines. *Wolfenstein* fans will find artwork, a map editor, extra levels, and other add-ons for that infamous castle, as well as patches, cheats, and solutions for many other games. The Gold Collection is also very strong on system, sound, and networking utilities.



The Visual Display Editor, one of the best text editors ever released, is available only as shareware, and is available on Night Owl #10.

Win Platinum
Limelight Media
$15-$25; (812) 234-8800

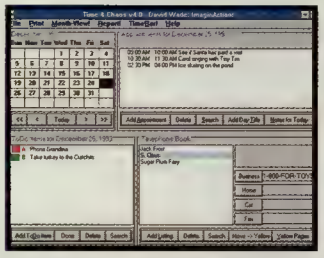
This offers a smaller selection of programs than many of the other titles in this list since it focuses exclusively on Windows software. But this disc merits attention for having perhaps the best-designed front end of any shareware CD-ROM on the market. With point-and-click ease, you're one button push away from instantly launching any program listed, or reading the docs, or downloading it to the directory of your choice. There are enough utilities to give you a thousand and one ways to customize your Windows environment...plus an abundance of applications, games, graphics, and sound files. Warning: Downloading self-discipline must be exercised if your system is not to suffer from a severe case of iconitis or that bloated feeling of fontglut.



The well-designed, easy-to-use interface is a real plus for Win Platinum.

CICA Microsoft Windows CD-ROM
Walnut Creek
$29.95; (800) 786-9907

A real winner, this CD-ROM contains the Windows archive from the Center for Innovative Computing Applications (CICA) at the University of Indiana. Top-of-the-line shareware struts its stuff in an impressive display of elegance and sophistication. Besides the latest versions of a host of Windows applications, games, and utilities, this disc is crammed with drivers, programming aids, toolbooks, word processor macros, and demos of commercial packages. And those using Windows NT will find a lot of worthwhile material here, too.



Time & Chaos, a slick Windows PIM is a fine example of shareware professionalism.

Simtel MSDOS CD-ROM
Walnut Creek
$29.95; (800) 786-9907

MEET THE PROFESSOR!

and explore the world of music

"Get down" with music the interactive way– in The Musical World of Professor Piccolo

OPCODE INTERACTIVE™

- Dig into a complete music theory course
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- Learn to read and notate music
- Select and learn any instrument – and hear it played within a piece
- Drop into the "Jazz Club" – find out about jazz history
- Check out the "Rock Club" and hear the band jam
- Interact with, and learn the form of a pop song or a symphony

"The finest, most concise, well-researched package on the study of music... lots of fun, too!"

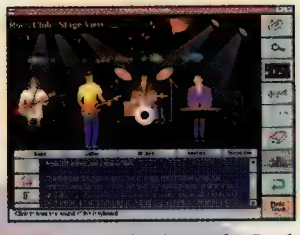
The Musical World of Professor Piccolo is the fun way to learn all about music – all on a fully interactive CD-ROM disk. Providing a firm foundation while making learning fun, Professor Piccolo is perfect for people with or without music training.

Games, music trivia, and a self-paced interactive music theory course make learning a snap. (And—parents or teachers need know little about music to get children started).

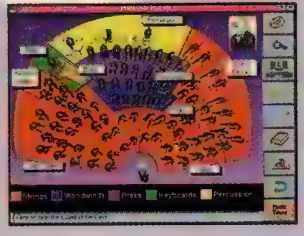
Ages 8 to Adult

• 1-800-557-2633

The main Music Town screen—The world of music is a click away!



Check out the Rock scene—learn about pop arrangements, or a guitar solo!



The bird's eye view of the orchestra pit —sample any instrument!

Also available: Allie's Playhouse and Composer Quest

PC Multimedia PC

The Musical World of Professor Piccolo

Product Information Number 182

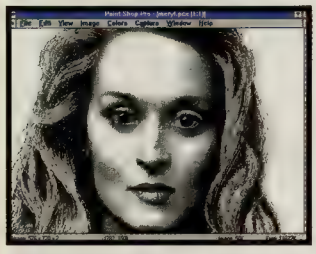
Opcode Interactive • A division of Opcode Systems Inc. © Copyright 1993 Opcode Interactive. All rights reserved. • The Musical World of Professor Piccolo, Allie's Playhouse and Composer Quest are trademarks of Opcode Interactive.

This one has to been seen to be believed. Having spun off a Windows collection (see above), Walnut Creek has packed the entire Simtel MS-DOS archive (more than 9000 files, arranged from Ada to Zmodem), onto this fully-loaded platter. DOS-based shareware junkies will think they've died and gone to heaven; however, there are no games here — this is strictly a power user's paradise. There are languages for people who program to a different drummer — add-ins and macros for the finest text-handling programs such as VDE, Qedit, and Nota Bene, information files not available elsewhere, and, of special interest, more than 100 programs to make computing a little bit easier for handicapped people.

ClipArt Heaven

Most Significant Bits
$29; (216) 529-1888

If you're into desktop publishing, or just want to add a little pizazz to your documents, then this is a must-have artwork collection. Thousands of 300+ DPI images — nearly all in PCX format, but including a more limited array of TIF, BMP, and CDR files — are ready for use in your own printed projects. Organized by subject, they illustrate everything from Advertising to Xmas. Most appear to be in the public domain, but a few items aren't (in which case there's an order form included in that particular sub-directory). The disc also contains a small array of useful graphic manipulation packages.



The popular Paint Shop Pro shareware is used here to view files on Clipart Heaven.

Multimedia Resource Library

Knowledge Media
$39.95; (800) 78-CDROM

This multimedia grab bag is also a multi-platform collection as well, covering DOS, Windows, Mac, UNIX, Amiga, and Sun systems. The statistics tell the story: 13,000 files, 625 megs used, with more than 1200 sound effects, 1000 pictures, 180 electronic books, 100 movies, 200+ mods, 114 Hypercard applications, and more than 600 multimedia programs, presentation players, and authoring packages. Enough said — if that whets your appetite, then this disc will encourage you to explore the possibilities of multimedia on your machine.

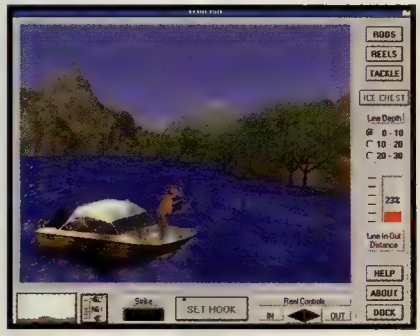
Desktop Bookshop

The CD-ROM Source
$15; (317) 726-0022

Most of us have an electronic "library" in our CD-ROM collections, but this budget-priced Desktop Bookshop is the one which ends up in the winner's circle. It does include a few viewers, but there's no real interface to speak of — just hundreds of plain-vanilla texts, both zipped and uncompressed, packed neatly into an array of sub-directories (8000 files/ 400megs). You can download anything into your word processor of choice, providing it will accept some pretty large files, and then read them or copy and paste them to your heart's content. Besides a full selection of familiar and not-so-familiar out-of-copyright classics, this disc boasts a huge selection of historical documents, government papers, Supreme Court decisions, nutritional advice, the CIA World Fact Book, the Bible, and a wealth of computer-related reading, including much recent material culled from Internet sources.

Games Platinum

Limelight Media
$15-$25; (812) 234-8800



WinFish 1.0 requires almost as much patience and cunning as the real thing.

Tired of Solitaire and Reversi — and who isn't? — this compendium of shareware games for Windows allows you to add a whole suite of entertaining new programs to your hard drive. Gold Monkey, for example, is an addictive puzzler that will pique the interest of even the most jaded Minesweeper expert. If you got hooked on Bass Tour, the DOS shareware fishing simulator, then check out WinFish, a credible first effort to recreate the fishing experience in a graphical environment. This one's fun and games all the way.

Learning Heaven

Most Significant Bits
$29; (216) 529-1888

This title covers educational aids from algebra to zoology. It ranges from kindergarten edutainment to college planners, including music and math, science and spelling, teaching tools and typing tutors. It's weak in some areas (chemistry, for example), but strong in others (there are five different Japanese tutorials). This programs on this CD-ROM make learning fun.

David A. Wade, a free-lance writer based in Toronto, is a self-confessed shareware junkie. A native of London, he has worked as a film reviewer, novelist, and record producer.

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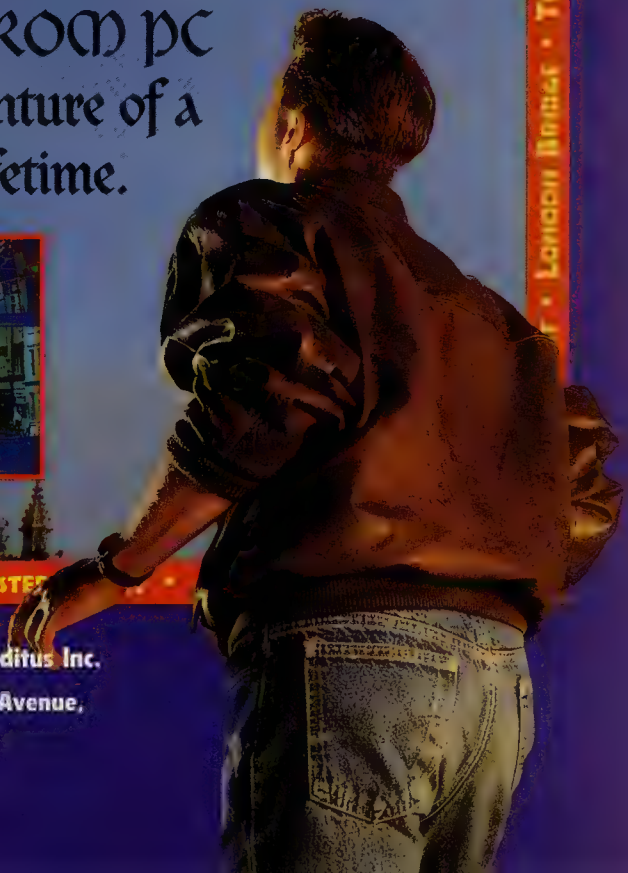
Join super sleuth Jon Daring as he races through the streets of London in his fight against evil! Using the most sophisticated video animation, graphics and digital sound available, C.I.T.Y. 2000 brings you the ultimate challenge of intellect and skill in the CD-ROM PC adventure of a lifetime.



ADITUS

CD-ROM

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Product Information Number 100

One-Stop Financial Management

A Software Classic Goes Multimedia

Financial planning, education, and advice — Intuit's latest version of Quicken *is a sound investment.*

Kathy Yakal

At first, it sounded like a pretty risky product move. A multimedia personal-finance package? Even considering that the core product was *Quicken*, the hottest personal-finance package around, who would need video, sound, and hundreds of megabytes to help balance a checkbook and explore investments? Unless you have a lot more money than you need, you probably don't like to spend any more time overseeing your finances than is absolutely necessary.

But Intuit pulled it off. *Quicken for Windows CD-ROM Deluxe Edition* is not just a mass of data slapped on a CD in hopes of cashing in on the public's growing appetite for multimedia software. The product has been in development for years, and what it adds to an already superb application, it adds with good reason.

The floppy-disk version of *Quicken* has matured over the years, moving beyond simple checkbook management, and adding information and education about your finances, but these features are limited primarily to reports and graphs.

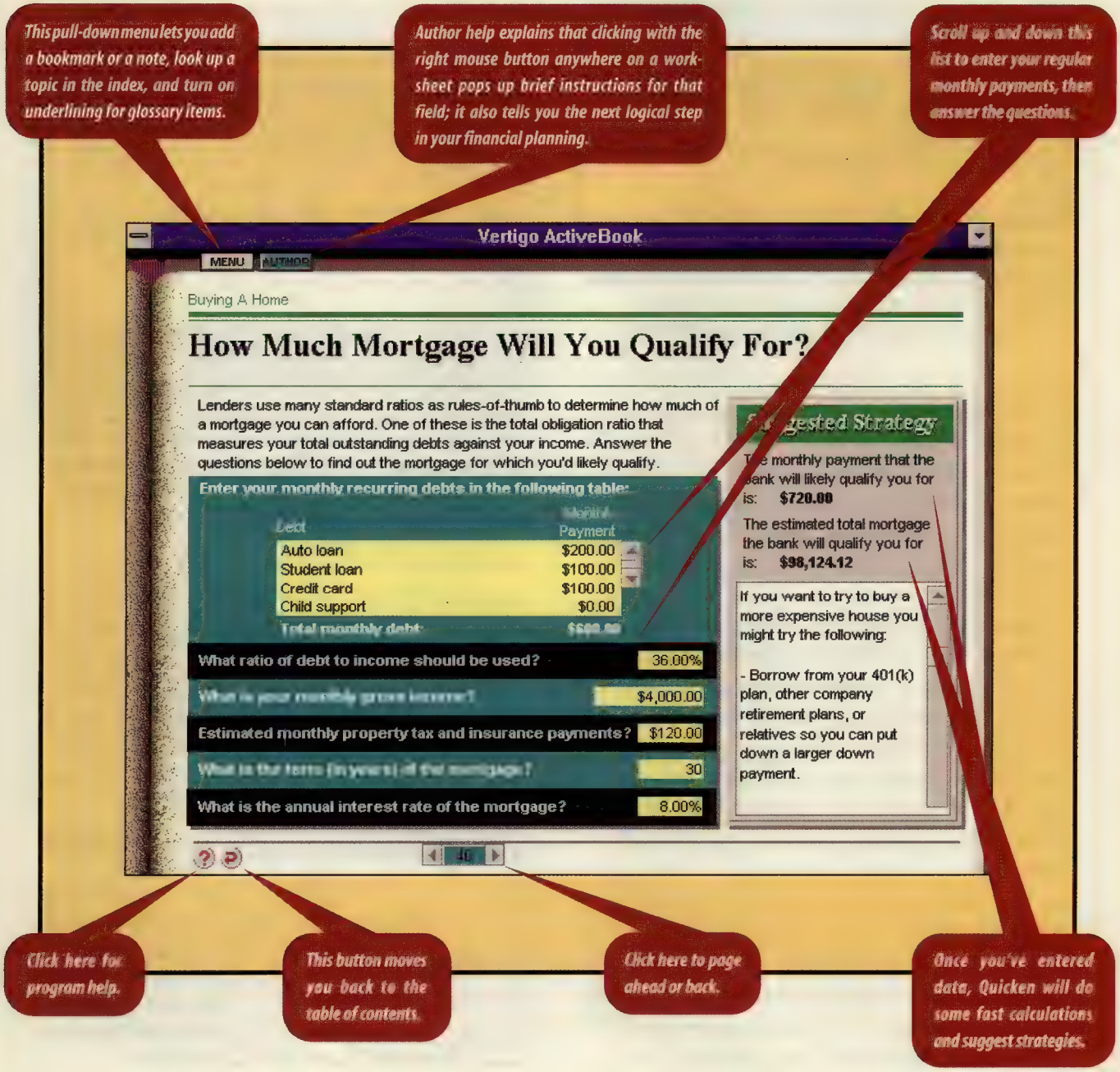
Quicken for Windows CD-ROM Deluxe Edition takes the financial learning experience to new heights. It helps you make informed decisions by offering a host of tools that integrate smoothly with *Quicken* itself. Thinking of jumping into the stock market, but don't want to pay hefty broker's fees or risk your hard-earned money on shots in the dark? Research the history of any particular stock using the Tradeline Electronic Stock Guide. Need quick schooling on the basics of investment? Tap into the Wall Street Journal Video Guide to Money and Markets, or the Wall Street Journal Personal Finance Library. Or if you simply want advice on managing your finances better, you'll likely benefit from the nearly 1,000 pages of "how to" tips on various aspects of financial management.

Like today's best reference CD-ROM titles, these economic guides are comprised of more than page after page of text. Rather than the traditional sea of gray,

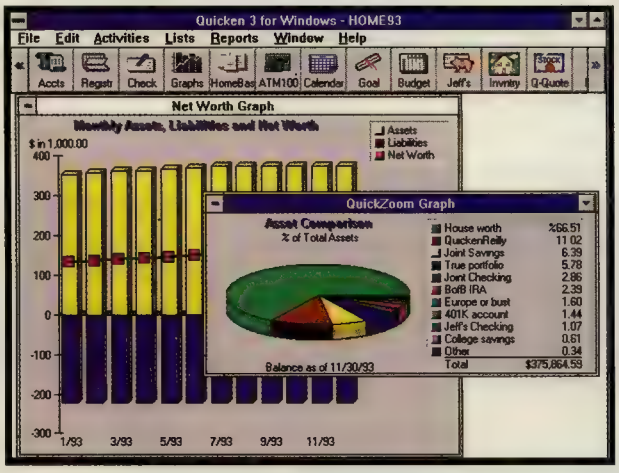
Quicken's tutorials are liberally augmented with colorful full-motion video, sound clips, and charts. Worksheets help users explore "what-if?" scenarios, and built-in on-line capabilities facilitate access to up-to-the-minute information on investments. *Quicken CD-ROM Deluxe* is a dynamic, creative mix of education and solid advice, wrapped in a state-of-the-art multimedia interface, and is designed to work interactively with *Quicken*'s record-keeping abilities. It's the first product of its kind, and competitors will have a formidable job matching its stride.

A Solid Core

The heart of this product is *Quicken*. Since its introduction almost ten years ago, *Quicken*'s popularity has increased steadily, and millions of people use it today. The key to its success is simple: Instead of forcing users into traditional, sometimes complicated double-entry accounting procedures, it offers a simple single-entry system based on the conventional checkbook. It works the way real people do, instead of forcing them into wrangling with unfamiliar procedures.



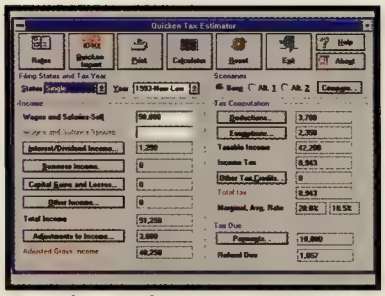
In *Quicken 3 for Windows*, the most recent incarnation of the disk-based product (and a major component of the CD-ROM), you can create, adjust, and maintain budgets. You can automate recurring and one-time payments, and request reminders when it's time to cut the checks; generate reports and graphs to assess items such as net worth, assets and liabilities, and accounts; set up and track investments;



The core program of the CD-ROM edition, Quicken for Windows, has plenty of power on its own. If you're faithful about regularly entering your income and expenses, you'll benefit from the analysis you get from these automatically generated charts.

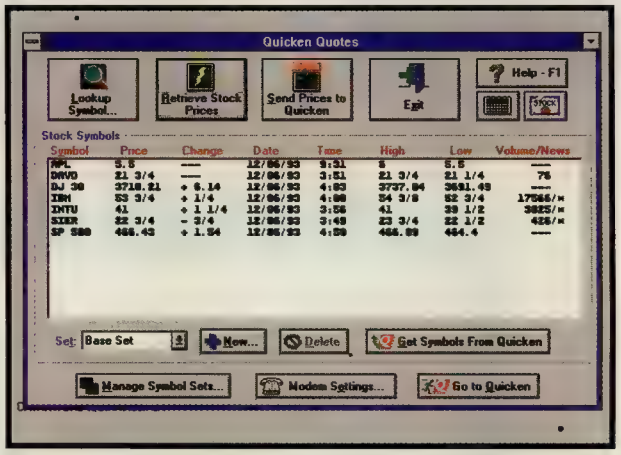
and plan for tax time by categorizing all of your transactions and exporting them to a tax preparation package. *Quicken* handles all of this with an understandable, easy-to-navigate interface — and it's backed with plenty of support both online or by phone. The program also offers thorough, clearly written documentation. In today's stable of increasingly sophisticated productivity applications, *Quicken* remains refreshingly simple, even as it matures.

Quicken Companion, an add-on module to *Quicken*, is included in the CD-ROM version. Companion consists of several smaller-sized programs, the newest of which is Quicken Home Inventory, a specialized database that lets you record and store descriptions of your possessions, their resale value, and replacement cost. This information is useful if you have an insurance claim, of course, but can also be used with *Quicken* to assess your net worth and to transfer information about new purchases. Another module, Quicken Tax Estimator, gives you a glimpse of what your tax picture might look like at the end of the year. Quicken Tips Onscreen is just what it sounds like: expert advice on how to best use *Quicken*. And if you have a modem, you can use Quicken Quotes to get up-to-the-hour stock quotations from an online service ($1 per minute, but access speed is fast).



Tax Estimator gives you an early look at your situation for the year ahead.

Current stock prices may be helpful if you've already made a buy and just want to keep up. *CD-ROM Deluxe* opens the door to a colossal amount of background on stocks for the novice, or for those looking for more information about companies than they can find in financial magazines or the business section of the newspaper. Tradeline Electronic Stock Guide is comprised of statistical information on more than 6000



Want an up-to-the-hour quote on a stock you've been watching? If you have a modem, you can tap into Quicken Quotes. Click on the Retrieve Stock Prices icon, type in the ticker symbol, and you'll have your information in about a minute.

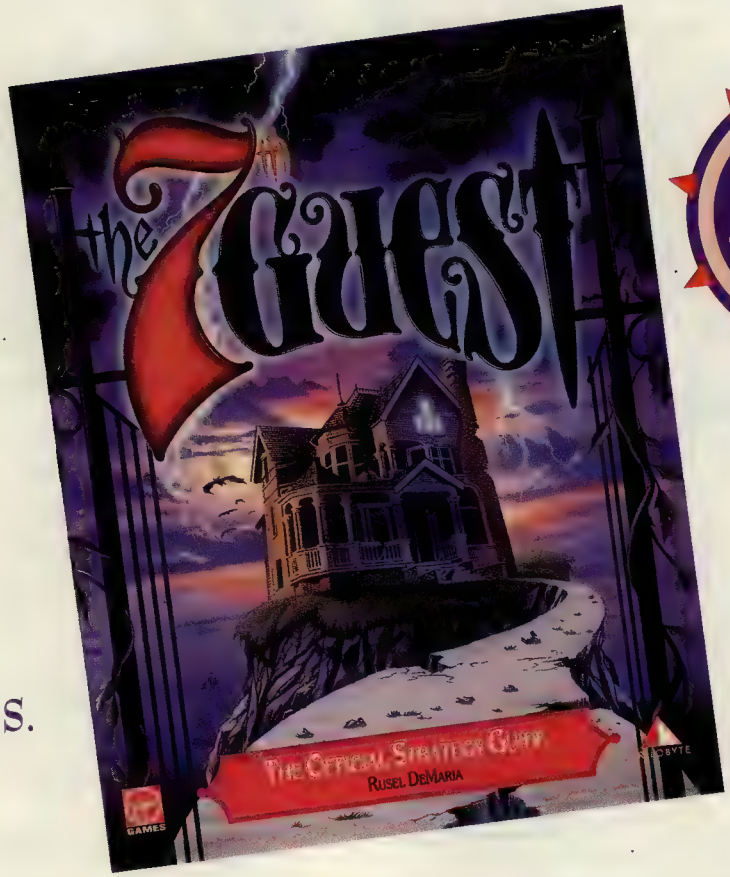
publicly traded NYSE, American, and NASDAQ stocks. Type in the ticker symbol, and up pop graphs showing leading market indicators (price trends, traded volume, P/E ratios, etc.) from the previous 12 months. When you buy the program, you get data from the end of the most recent quarter, as well as data from the next quarter when you register. If you find yourself using this module often and need frequent updates, you can subscribe to a monthly or quarterly service through IDD Information.

If you need to research the history of a particular stock, call up the Tradeline Electronic Stock Guide, enter a ticker symbol, and you'll get graphs and text on the company's recent performance.

A Great New Book From PRIMA Publishing...

THE 7th GUEST:

The Official Strategy Guide



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- A COMPLETE WALKTHROUGH WITH CLUES TO EVERY PUZZLE
- ALL THE PUZZLE SOLUTIONS IN A QUICK REFERENCE SECTION
- A COMPLETE DRAMATIZATION OF THE EVENTS OF THIS MYSTERY
- 7TH GUEST ARTWORK YOU'VE NEVER SEEN BEFORE
- THE COMPLETE 7TH GUEST SCRIPT
- A COMPLETE LIST OF CLUES AND COMMENTS MADE BY STAUF
- EXCLUSIVE PREVIEW OF THE MIND-BLOWING SEQUEL, THE 11TH HOUR: 7TH GUEST, PART II!

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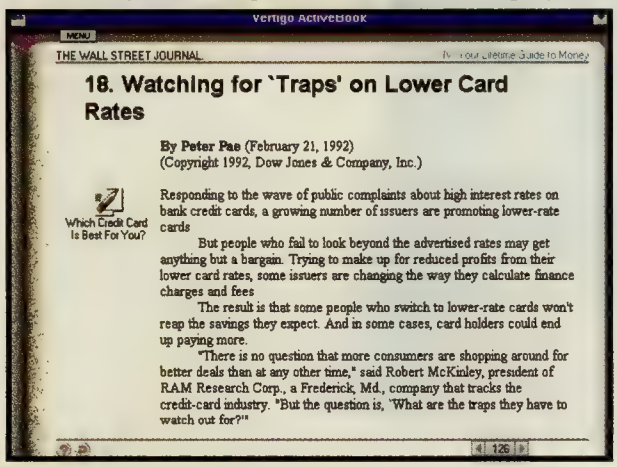
Product Information Number 183

Words for Anyone

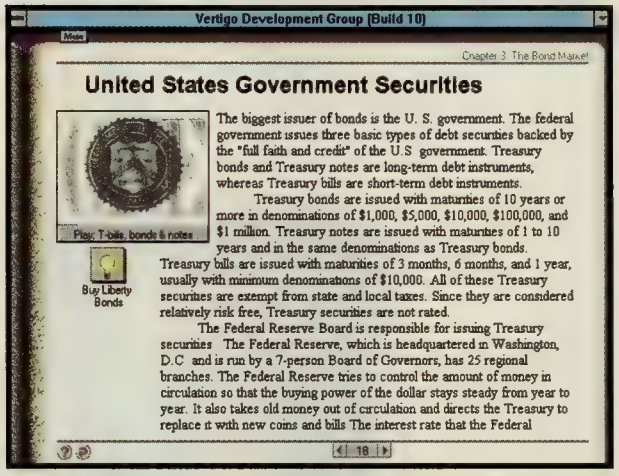
Textual reference information can be found in two other modules in *Quicken CD-ROM Deluxe*. U.S. Government publications of personal finance — nearly 1000 pages from more than 20 separate publications — deal with topics like starting and managing a business from your home, shopping for a loan, and applying for credit. The Wall Street Journal Personal Finance Library is also comprised of expert articles — 18 of them, and all are interactive. These articles deal with topics such as buying vs. renting a home, planning for retirement, and more general financial planning. Using worksheets from Vertigo Development Group, you can do more than just read and digest the information; you can actually plug your own figures and do some "what-if" planning based on the advice offered there. And if you're used to jotting notes in the margins of books and using bookmarks, you'll find equivalent functions in the program.



The 18 articles in the Wall Street Journal Personal Finance Library cover topics such as investment strategies, buying a home, retirement, and college planning. If you click on an icon in the margin next to a topic, you can run your own numbers in an interactive worksheet to help you refine your financial strategy.

Reading lengthy articles onscreen may not sound so appealing to some people, but Intuit has incorporated text readers from third-party vendors to make it easier. Rather than just scrolling through page after page of text, you click on navigational buttons at the bottom of the screen to move to the next or previous page, back to the table of contents, or to glossaries or indexes. As in every part of the program, you're not likely to need much help getting around; onscreen help is plentiful and accessible.

If little help is needed to read all the articles included with *Quicken CD-ROM*, even less is required to watch. The most visually exciting component in this product is the Wall Street Journal Video Guide to Money and Markets. Here, you can sit back and watch Wall Street Journal experts discuss investment-related topics — stocks and bonds, foreign exchange markets, and commodities — in terms that non-Wall Street types can



One of the most innovative elements of Quicken for Windows CD-ROM Deluxe is its use of informative video clips.

comprehend. A total of 13 topics are covered in 11 segments, adding up to 25 minutes of color video with sound.

Quicken for Windows CD-ROM Deluxe Version doesn't require any more of your system than most other applications, if your setup is multimedia ready. Base requirements are a 386 or higher with 4 megs of RAM, DOS 3.3 or higher, MSCDEX 2.2 or higher, Windows 3.1, 10 megabytes of hard-drive space, a 256-color VGA or SVGA monitor, an MPC-compatible CD-ROM drive, sound board and speakers, and a modem, if you want to access Quicken Quotes.

Watch 'em Come

Productivity applications are moving to CD-ROM slowly and carefully. While the disc medium works very well for many purposes, standalone productivity products have not traditionally needed the extra real estate and pizzazz offered by multimedia.

Intuit will likely strike a chord with many CD-ROM owners, though, because its core products deal with — and do it well — a need that we all have: financial management. The company has developed supplementary modules that enhance and build on an already established, respected application. This successful combination of education and advice, interactive planning, and guide to sensible, hands-on money management may well be one of the best and most useful applications yet to hit the consumer CD-ROM market.

Kathy Yakal is a California-based free-lance writer who has been covering the personal computer industry since 1983. She has specialized in writing about financial software since 1989.

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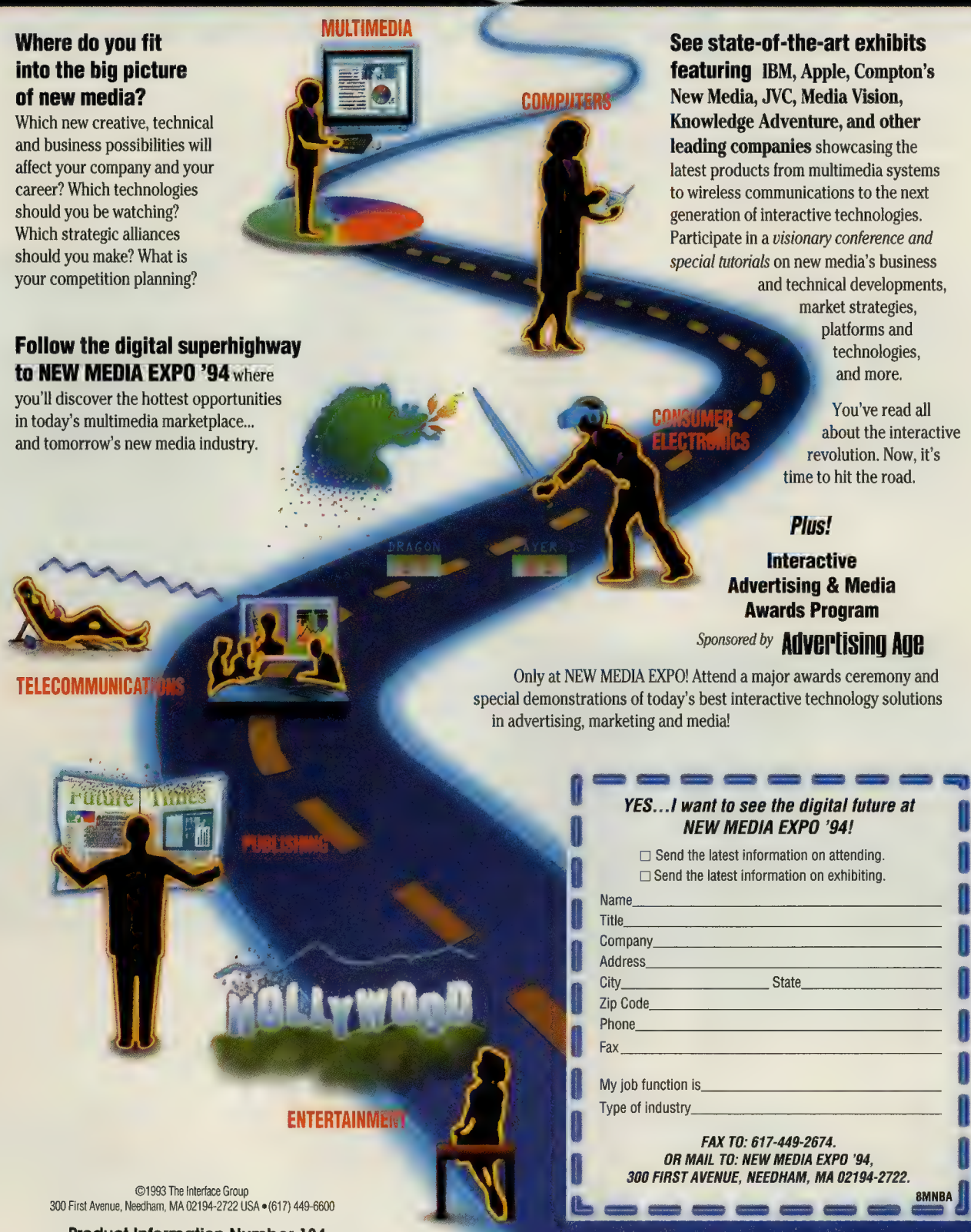

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Product Information Number 184

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An upcoming episode of ComputerWatch will profile MPI Multimedia, which is providing the general public access to one of the world's greatest film and video archives through the interactive magic of CD-ROM. With over one million moving images dating back to 1896, MPI MULTIMEDIA is tooled to present traditional subjects on futuristic discs. Viewers will be introduced to their large variety of CD-ROM titles for Macintosh and Windows compatible systems.

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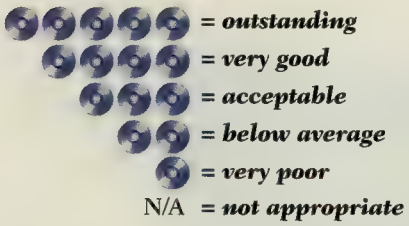
REVIEW RATINGS

How We Evaluate CD-ROM Software

All of the reviews in *CD-ROM Today* are now rated by our editors and writers. Various criteria are used to judge the relative merits of each CD-ROM title, with each review compared to other titles within its software category. We use a five-point system with a conventional rating scheme:



Each software reviews section — Reference, Entertainment, Education, Applications, and Resource Discs — has unique rating components. Some of these components are used in several categories.

Interface describes how well the software allows the user to interact with the program. It includes a judgement on the presentation of content, points of entry, and links between program features.

Visuals includes graphics, animation, and video, as appropriate to the subject matter of the title.

Audio refers to sound, music, and narration, as suitable to the content of the CD-ROM.

Overall represents the bottom-line grade of the product after weighing all rating components.

REFERENCE

This category covers the broadest range of titles, from history discs and literary collections to travel guides and atlases. Reference works are judged against only those CD-ROMs with similar subject matter.

Depth of Information describes the amount of information and detail in view of the title's subject matter.

ENTERTAINMENT

Like the Reference category, Entertainment covers an array of software types. Entertainment includes games, but also covers many *edutainment* (a hybrid of education and entertainment) titles, simulations, and other products that were designed primarily to entertain.

Entertainment Value identifies one of the most important elements of any entertainment title: the challenge or fun factor.

EDUCATION

This category covers a variety of learning titles, many of which are targeted to children. Also frequently included are reviews of general-interest adult education titles. Many of the products reviewed in this category are appropriate for classroom use.

Learning Value identifies how well the reviewed software teaches, informs, and guides.

APPLICATIONS

From presentation programs to word processors to paint programs, this category covers a wide range of titles, many in the area of productivity.

Range of Features describes the quantity of *useful* features that tap the program's power.

Performance is measured by how well the program executes in terms of what it sets out to deliver. This category can often reflect speed of performance.

Ease of Use is self-explanatory, but we should note that this rating includes a judgement on how intuitively a program operates, as well as the effectiveness of its documentation, including on-line help.

Integration of Features is a significant rating, especially for feature-packed applications. Important considerations: the functionality and elegance of the program's features, and how well these features interrelate.

RESOURCES

This category covers CD-ROMs that serve as a resource to the user, and in most cases includes collections of programs on one disc. Resource Discs will not necessarily run every issue, as most releases fall into the sections described above.

Variety is an evaluation of the diversity of programs on the CD-ROM, with a high rating reflecting a good mix. A low rating in this category often reflects redundancy within a collection.

Usefulness describes the overall utility of the CD-ROM to an end user. The rating for this category is frequently our measure of the content in terms of how the CD-ROM is promoted or advertised.

Question or comment? Write to:
CD-ROM Today,
P.O. Box 29364, Greensboro, NC 27429

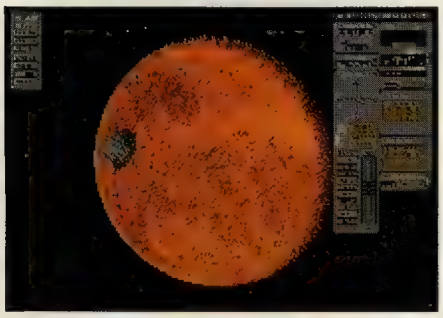
REFERENCE

RedShift

Depth of Information:	
Interface:	
Visuals:	
Audio:	N/A
Overall:	

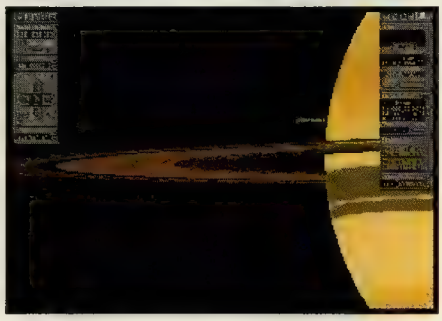
Mac/Windows; $99.00

My first computer astronomy program showed several hundred stars and five planets as little black and white squares. I thought it was wonderful. Just over a decade later, *RedShift* shows 250,000 stars and all of the planets, plus



29 major moons, more than 40,000 star clusters, galaxies, and nebulae, and even 5000 asteroids and comets. Now *this* is wonderful.

Set the time and place, and *RedShift* shows the sky in amazing color and detail. Examine the contents of a constellation or step through time to watch the planets march across the sky. Add constellation outlines and coordinate grids, or you can apply filters to show only objects with certain characteristics. Zoom on a planet until it fills the screen. Add new comets as they are discovered. And you can click on



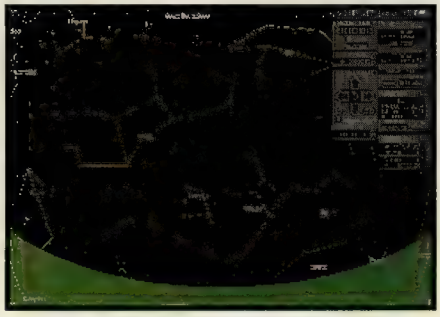
any object for detailed information.

What's more, you're able to look at the sky from any planet or moon, and for the earth, moon, and Mars, you can view from any geographic location (detailed, shaded relief maps let you pick your site). Watch Halley's Comet from the North Pole of Mars, eclipses of the sun by Saturn's rings as seen from one of Saturn's moons, and Pluto's changing phases from its moon Charon. Only Buck Rogers could go so many places (but not as quickly). Planet and moon images are based on spacecraft photography, and they look truly grand.

The visual impact does not come at the expense of accuracy. *RedShift* was programmed near Moscow by former Soviet rocket scientists who used algorithms developed for the space program. It's sufficiently accurate to simulate a solar eclipse that happened thousands of years ago or to place a martian moon to within one mile of its correct position at any time during this century.

In addition to simulating the sky, *RedShift* generates tabular reports of rising/setting times, magnitudes, distances, and so on, over a period of time for a planet or the moon.

RedShift includes Photo Gallery, a collection of more than 700 full-color images of the planets, moons, and deep space objects — a far better assemblage than many astronomy photo discs that cost more. The images can also be viewed directly with appropriate graphics software. Movie Gallery features 29 short QuickTime movies, mostly of astronauts on the moon and looped animated diagrams showing how telescopes work. The Penguin Dictionary of Astronomy, with illustrations, is fully integrated into



the program, and you can look up words directly or click on highlighted words that appear throughout the program. All of this makes heavy demands on memory and runs best on a fast machine.

RedShift bills itself as multimedia astronomy, and it comes closer than any other astronomy program I've seen. It's awesome. Professional as well as armchair astronomers will be fascinated by it for hours.

— John Mosley

Maris Multimedia Ltd. 99 Mansell St., London E1 8AX England; U.S. distribution: **Maxis** 2 Theatre Square, Suite 230, Orinda, CA 94563 (510) 254-9700

Oceans Below

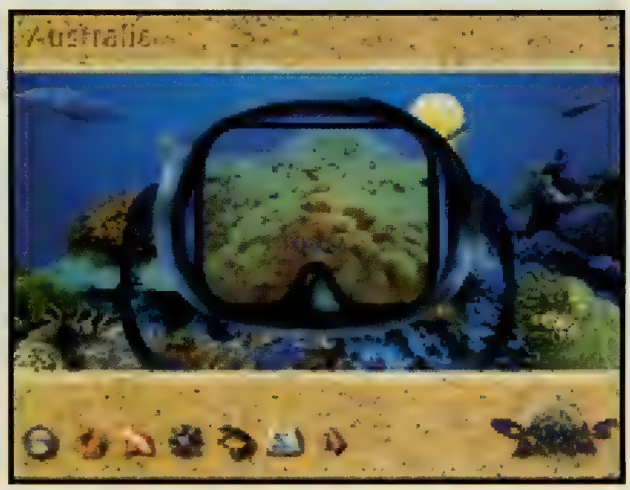
Depth of Information:
Interface:
Visuals:
Audio:
Overall:

DOS/MPC/Mac; $49.95

Oceans Below is the kind of product that you could easily overlook. It doesn't overwhelm with gadgetry or extras, and it focuses on a fairly limited topic. But beneath its subtle exterior, it's an excellent teaching tool, and an unusual — if not dazzling — approach to the type of activity multimedia seems ideally suited to portraying.

Oceans Below is both a reference product and a game — but not a diving simulation. You're not going to learn how to dive, which may be disappointing to some. On the other hand, clicking on an icon called Dive Info will give you some substantial narrated information about each piece of diving equipment and a wealth of other facts. The product's real emphasis, however, is what you'll find once you're below the surface of such exemplary diving spots as the Galapagos Islands, the Caribbean, Australia's Great Barrier Reef, and the Red Sea. You'll see ship and airplane wrecks, and you'll be trying to find over 60 sunken treasures.

A map presents you with the choice of diving locations around the world. Some of these choices, the South Pacific for instance, lead to more detailed regional maps, from which you choose again. Once you zoom in on your dive site, you can obtain a surprisingly detailed video about the surface area, or you can skip the introductions and just descend.



Once you've dived, the static screen demonstrates clearly that *Oceans Below* is primarily a reference CD-ROM. Instead of fascinating ocean-floor video footage, which you might expect if you watch televised dives, you get a screen with a collection of plants, animals, and occasional buried treasure. Clicking on any of the items yields a short video, cleverly displayed in a diving mask that disguises the small size of the video window. A narration accompanies the video, briefly explaining about the item you've just chosen.

If there's a disappointment in *Oceans Below*, it lies in the the almost anti-climactic feel of these descent screens. After the lengthy videos detailing the surface area, you're led to expect the same from the underwater videos, but it doesn't happen. Another disappointment is an interface design flaw — in the MPC version, hitting the ESC key exits you from the program without so much as a "have a nice day," but this is relatively minor.

Oceans Below is a solid, well-designed product that just doesn't carry its idea far enough. It's an excellent learning tool, but it could have been even better, more comprehensive, and much more detailed. Still, for anyone interested in a multimedia edutainment title with a great design, it shouldn't be overlooked.

— Neil Randall

The Software Toolworks 60 Leveroni Ct., Novato, CA 94949 (415) 883-3000

Government Giveaways for Entrepreneurs

Depth of Information:
Interface:
Visuals:
Audio:
Overall:

MPC; $59.95

Matthew Lesko is the "Guru of Government Giveaways," author of numerous books on the subject, excellent at making the arcane and twisting world of government resources accessible to the average person. And now he's on CD-ROM.

Beginning with "Eleven Lies About Your Government," Lesko explodes all the myths about just what the government does and doesn't do with our money. Low-interest loans, grants, reams of data on the marketplace, mailing lists, hotlines,

discounts from government auctions, aid for selling overseas, and fat federal contracts are all part of our government's plan to stimulate business growth and, therefore, jobs.

To say that the path to these resources is labyrinthine is obvious: we are, after all, talking about *the U.S. government*. Lesko manages to make it all seem so easy, however. *Government Giveaways for Enterpreneurs* is a treasure trove of ideas, gimmicks, and more than nine thousand addresses and phone numbers. Sample application forms and tips on how to apply for aid are coupled with frank discussions of the realities of starting businesses and numerous success stories. It's an invaluable resource, pure and simple.

Strong boolean-search capabilities make it easy to get to specific information. You can highlight text, just as you would with a highlight marker, or you can attach small electronic post-it notes anywhere you like. Also, you can easily cut and paste text to create your own resource directory. Various types of pop-up links make cruising for information, or dropping to another section, very simple. In addition, you get about two hours of audio clips and eleven video clips, all featuring Lesko himself, as well as tours of the various centers that offer help.

Lesko has a goofy kind of charm, kind of like Don Knotts in a power tie. It helps make the scary bureaucratspeak less intimidating.

There are some small problems: text occasionally seems to be missing, and audio/video clips are not directly linked to the text. Otherwise, this product is mandatory for those with their own business, or those looking to start one.

— T. Liam McDonald

Infobusiness 887 S. Orem Blvd., Orem, UT 84058 (800) 657-5300

Precision Mapping

Depth of Information:
Interface:
Visuals:
Audio: N/A
Overall:

DOS; $149.00

The operative word for this program is *precise*. Beginning with a compressed overview map of the United States, *Precision Mapping* takes you to Region, State, County, City, Neighborhood, or Block level by means of a simple device: you draw a block around the area you wish to examine.

Because a program with such extensive overlays must be large, *Precision Mapping* occupies two CD-ROMs, one for Eastern states and one for Western — which explains why, in the figure above showing the greater St. Louis area, the world seems to end at the Mississippi.

From a toolbar on the right side of the screen, you select options for moving the viewing area, drawing on it, selecting regions by zip code or telephone area code, drafting lines or figures on the map, and so on. Another navigational aid is the Bird's Eye View, seen in a small window at the upper right. Here, the area currently selected is specified within the context of surrounding territory, and the indicator box can be dragged to fine-tune your selection.

From pull-down menus, you can select the kind of information you wish displayed, such as major highways, landmarks, churches, schools, etc. Once you've mapped your neighborhood and drawn lines indicating the route to the St. Patrick's Day party at your house, for instance, you use the scissors icon to clip the necessary part of the map and save it as a .PCX file. This can then be printed and distributed.

How well this feature works can be seen from the accompanying screen shots, which are not screen shots or dumps at all. These were created with the clip feature.

Currently, the two discs of *Precision Mapping* are bundled with a third called Phone Directory (from the American Business Phonedisc), which lists more than 11 million business phone numbers. The search engine is simple and intuitive.

For its amount of detailed information, a wonderfully easy-to-use navigational system, and some very handy tools, *Precision Mapping* comes highly recommended.

— Ervin Bobo

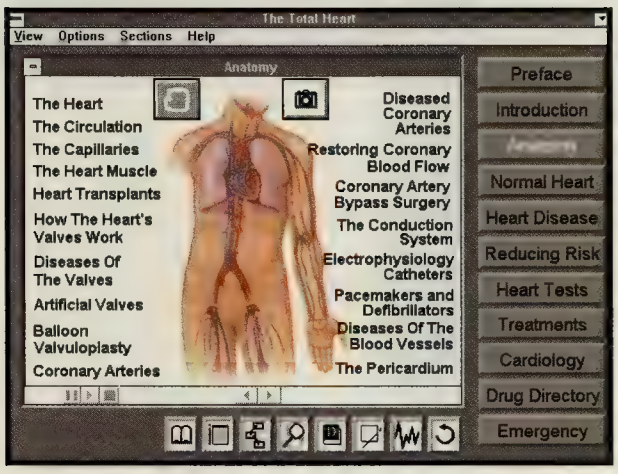
S & S Publishing P.O. Box 552, Lemont, IL 60439 (708) 257-7616

Mayo Clinic: The Total Heart

Windows/Mac; $59.95

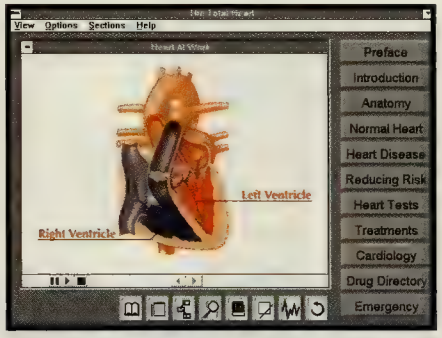
If, as the song goes, "you've gotta have heart," there's no better CD-ROM on the subject to add to your collection than IVI's latest computer-based title.

The Total Heart lives up to that famous medical facility's reputation on almost every account. Anyone who has more than a passing interest in medicine or staying healthy is likely to spend many enjoyable hours mining the rich veins of reference material found here.



The Total Heart is segmented into 11 main sections accessed by buttons that remain on-screen and hot throughout each user session. A detailed review of the mechanics of the heart and circulation system sets the stage for subsequent discussions of heart disease. Risk reduction, current treatments, tests, and medications are methodically covered in a scholarly, but not overly technical manner.

This disc has a solid, unified look and



feel, since it is essentially an interactive digital adaptation of William Morrow and Company's *Mayo Clinic Heart Book*. Under most circumstances we'd consider drawing a reference CD-ROM from a single source to be a weakness. On the other hand, when that source is one of the acknowledged leaders in the field, it's a different story.

There's no arguing that IVI's interface is one of the best on the block. An animated help facility takes the neophyte by the hand and provides a clear and concise tour of *Total Heart*'s facilities with redbook audio accompaniment. Although the subject at hand is intrinsically technical, the text manages to successfully skirt the border of becoming overly clinical. An intuitive set of tools serves up simple and complex searches, an audit trail with hot bookmarks, and a dictionary of medical terms.

The illustrations are generally first rate, although none of the motion sequences live up to the promise of the impressive animation used in the opening titles. Color is aptly used in the text portions of the material to indicate subject links, dictionary words, illustrations, search hits, and cross-references.

As its title implies, there's not much missing from *Mayo Clinic: The Total Heart*. Other than the omission of an interactive quiz on personal risk factors and detailed treatments of heart-smart diet regimens, this package doesn't miss a beat. Whether you're into pumping iron or hemoglobin, it's the best reference yet on your body's most critical muscle.

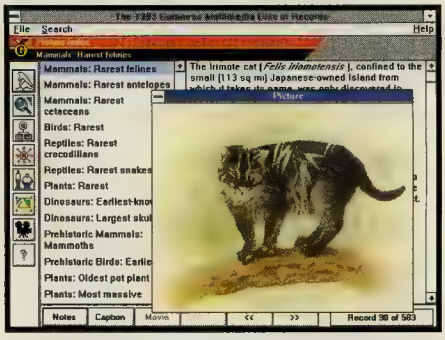
— Arlan R. Levitan

IVI Publishing 1380 Corporate Center Curve, Suite 305, Eagan, MN 55121 (612) 686-2600

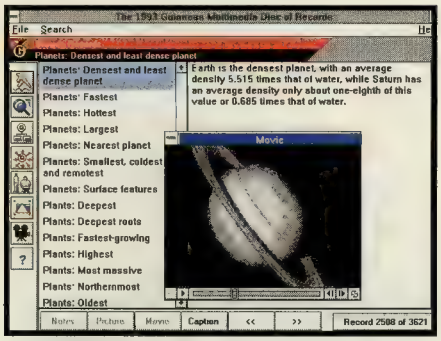
1993 Guinness Multimedia Disc of Records

DOS/MPC/Mac; $99.00

How does one benchmark the *Guinness Disc of Records*? During installation, a quick and easy process, I jotted down a couple of random subjects and superlatives.



The main screen booted speedily, displaying a variety of entry points: browse mode, text search, topic, superlatives index, still pictures, or movies. I scored an immediate hit on my first query search: "What was the shortest war?" Britain's tiff with Zanzibar in 1896 lasted for all of 38 minutes. My second inquiry — "What was the longest marriage?" — needed less than



seven seconds to find an exact match, plus two items of related interest: it was two cousins, married at age 5, who enjoyed 86 years of connubial bliss. The subject index yielded two screenfuls of information on my third topic, black holes, which I judged comparable to the kind of mini-article you might find in a desk encyclopedia. My last test was the *Guinness Book of Records* itself. Actually there were three mentions; the most important one being the fact that, after the Bible, it is the best-selling book in the world, with total sales of 77 million copies to date. The CD-ROM multimedia version deserves to be a brisk seller in its own right. It's a remarkably complete treasure chest for trivia buffs as well as an indispensable arbiter for settling arguments.

Earlier editions of this CD-ROM were offered as bundled software with various upgrade kits. So if you have one of these earlier versions, is it worth upgrading to the latest 1993 edition? Definitely. This latest version contains more than 3600 new or updated entries, a gallery of video clips with audio accompaniment, and a Random Record Explorer which, in effect, turns the disc into an entertaining screen saver. The bottom line: the *1993 Guinness Multimedia Disc of Records* is a CD-ROM worth serious consideration.

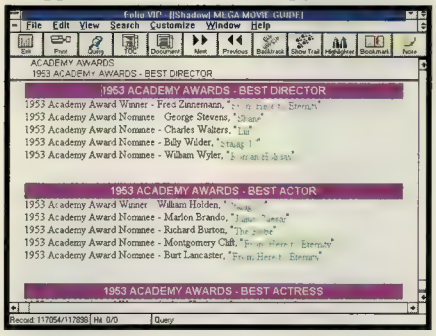
— David A. Wade

Grolier Electronic Publishing Sherman Tpk., Danbury, CT 06816
(203) 797-3530

Mega Movie Guide

DOS/Windows; $59.95

How many times have you gambled on a movie — appetite whetted by previews, posters, and enthusiastic newspaper blurbs — only to be utterly disappointed and left wishing you'd waited



for the videocassette release? Using Infobusiness' *Mega Movie Guide* will probably leave you with the same sense of dissatisfaction. The package copy states — rather emphatically — that this reference CD-ROM contains nearly 60,000 reviews (5000 of which are treated to extensive criticisms), film star biographies, and almost two hours of actual movie footage from some of the most popular films of all time. Sounds like Infobusiness is trying to give Microsoft's *Cinemania* a run for the money, doesn't it? Unfortunately, upon closer inspection, the whole is very much less than the sum of its promotional claims.

Most of the 58,000 film reviews scarcely exceed one line (there's usually not much of value you can say in 20 words or less), while the so-called longer critiques offer little more than you would find in a Maltin-type guide or one of the other well-thumbed paperbacks. What the back-cover blurb neglects to mention is that many of the reviews are merely duplicates that have been translated to either French or Spanish. To compound the confusion, running times and star ratings often vary between all these doubled and tripled entries.

Take "Hardware," a cyberpunkish sci-fi flick, as a case in point — it gets a one-paragraph critique giving it only one star, then a capsule comment in French (for which the director's name is "not available," even though it's clearly in view in the other entry), then another English mini-review which gives the film *three* stars. "Blackbeard's Ghost," a tepid Disney offering, gets no less than five entries: a 40-word summation, followed by a 14-word comment, a Spanish entry, and a duplicated review of the truncated TV version. This is less than you might want to know and yet more than you really want to read about either film.

The video clips — well, yes, there are several excerpts included — are for the most part multiple selections from films of little importance. Do you really need four movie clips from a minor horse opera like "Vengeance Valley"? The stills collection is a curious mishmash, too. Move to the Gs: no pictures of, say, Garland or Gere here — the entire G gallery consists of a picture of Eva Gabor, two shots of Cary Grant, and one of Richard Green. *Richard Green*? He was British TV's Robin Hood long ago and doesn't even rate an entry in *Mega Movie Guide*'s own biographical guide (but then neither does Eva Gabor).

In its favor, *Mega Movie Guide* does offer an Academy Award list, which includes all nominees as well as winners for any given category. There's also a generous selection of adult movie titles to bulk out the total number of reviews, although I couldn't help wondering why every adult video merited a one-star rating

(is there absolutely no difference between them?). The new Folio front end and search engine is flexible to a fault. You have to type in a fairly careful set of parameters if you don't want to end up with too many search hits. And it's awfully sluggish, even on a very fast 386.

The less said about the installation procedure the better — if you have problems, do make sure you have a temp file set up in your autoexec.bat — but the folks at Infobusiness assure us that they're working on that.

Overall, this is an insipid, slapdash, almost cynical attempt to cash in on an area of genuine user interest. Video reference buffs will probably feel a compulsive need to add it to their collection, but even they should be warned that Microsoft's *Cinemania* remains the "A" feature at the top of the bill while *Mega Movie Guide* is strictly "B" grade.

— David A. Wade

Infobusiness 887 S. Orem Blvd., Orem, UT (801) 221-1100

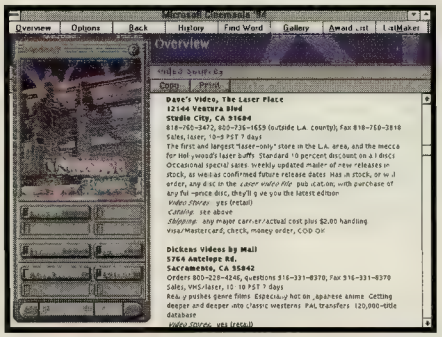
♦ ♦ ♦ ♦ ♦ ♦

Microsoft Cinemania '94

MPC; $79.95

Only eight months ago I wrote a feature in the premiere issue of this magazine comparing the debut edition of *Microsoft Cinemania* with *Roger Ebert's Movie Home Companion*. Now *Cinemania '94* has arrived, and there's our favorite roly-poly film critic smiling at us from the cover. Incorporating reviews from *Ebert's Video Companion* is only one of the many substantial improvements Microsoft has implemented in the latest release of what is already a CD-ROM classic.

The backbone of this multimedia movie infobase is still Leonard Maltin's invaluable guidebook, and the new disc includes all 19,000+ mini-reviews from the latest issue (the paperback currently on bookstore shelves). And to this vast collection they've added not only Ebert's perceptive comments but also a generous selection of Pauline Kael's remarks from her *5001 Nights at the Movies*. Backing up this impressive panel of movie reviewers

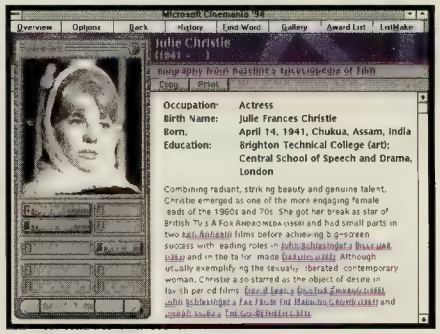


are the always-worth-reading entries from the *Baseline Film Encyclopedia*, which brings a balanced perspective to what sometimes threatens to become a confusing, critical Tower of Babel (compare, for example, Kael's comments on *The Wild Bunch* with the enlightening essay from *Baseline*).

The gallery of portraits and film stills has been expanded, more dialogue snippets have been included, and a small collection of great movie themes and full-motion clips has been added. The video excerpts have been especially well chosen — one only wishes there were more — for they are the key moments that we never grow tired of watching: Rick's first encounter with Ilsa in his cafe in *Casablanca*, the climax of the buffalo hunt from *Dances with Wolves*, the spaceship docking from *2001: A Space Odyssey*.

The front end, with its artfully contrived "remote controller," is even slicker and smoother than the first time around.

Is there anything wrong with



Cinemania '94? There are always glitches in a project this huge. Push on the hypertext link for Kaneto Shindo's *Onibaba* and you're hurtled into a review for B-movie fave *God Told Me To* (that's because at some stage of their video shelf life, both movies were marketed under the title of *Demon*), and then...well, to go on would be carping. You must bear in mind that all this information is angled towards the cinema-going film enthusiast and not the diehard video fan. But even granted that big screen bias, there's nothing on promising newcomers like Patricia Arquette and Jennifer Rubin or many of the more worthwhile made-for-cable movies.

As *Cinemania* grows and improves, is it the best film-lover's reference guide available? I'm going to hold off making a judgement on that until I've seen the forthcoming *Video Hound's Golden Movie Retriever*, but I do find that *Cinemania* is a most pleasurable end in itself, offering many hours of exploring the magical history of the silver screen. If you're a movie fan, this isn't just a disc you'll want to own, but one you'll treasure.

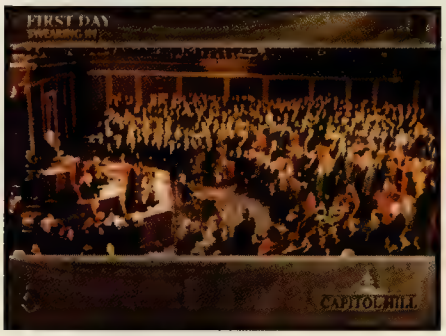
— David A. Wade

Microsoft Corp. One Microsoft Way, Redmond, WA 98052-6399 (206) 882-8080

Capitol Hill

DOS/Windows/Mac; $49.95

The premise behind *Capitol Hill* is appealing. Not content to lecture players about the workings of national government, the designers chose a far more imaginative route. This is a simulation of the workings of Congress. You, the player, become the elected representative. The exciting approach opens the door to a

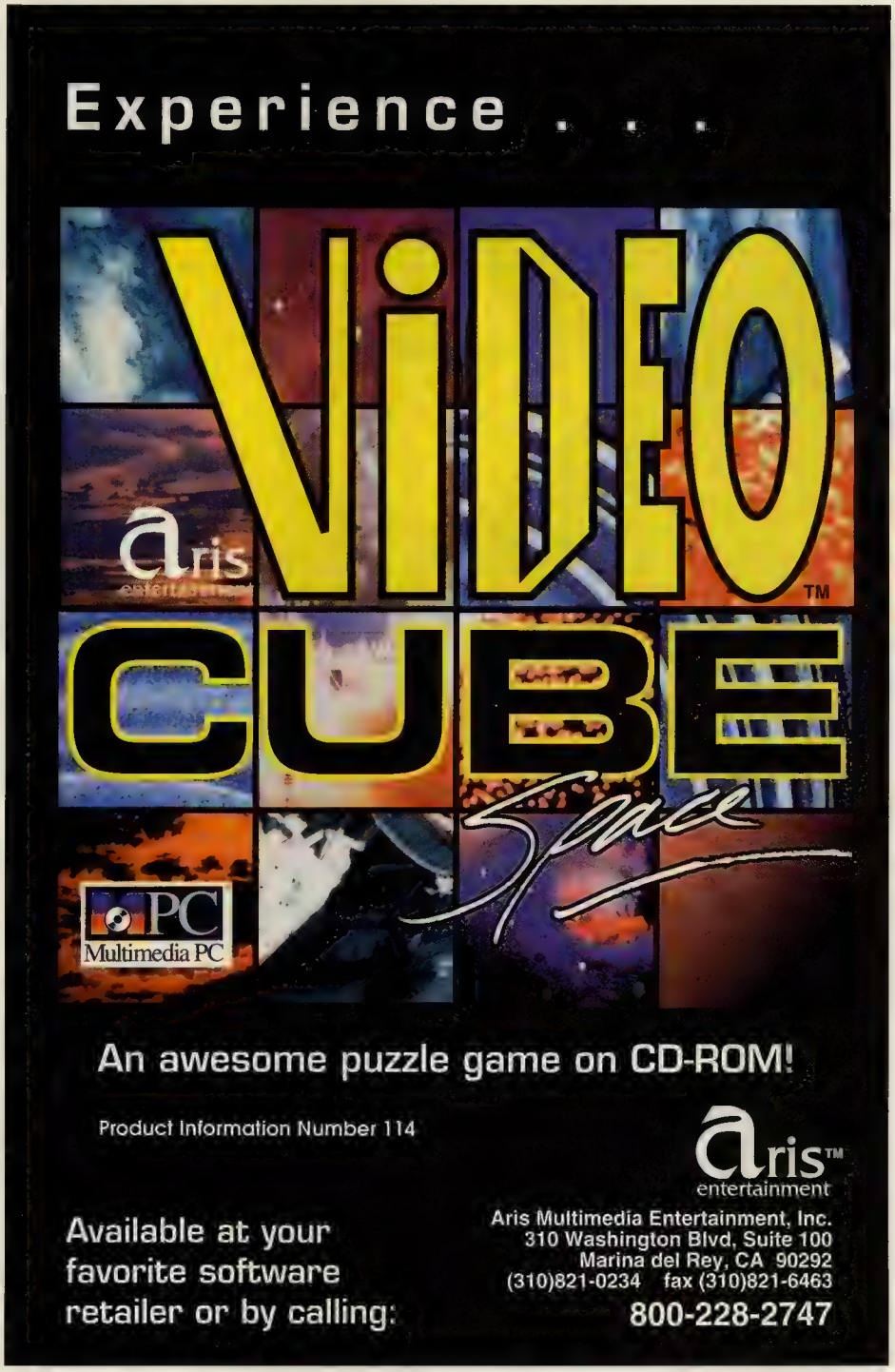


myriad of possibilities. In the end, unfortunately, *Capitol Hill* fails to capitalize on them. Like the place it portrays, *Capitol Hill* suffers from too much narration and not enough activity. But there is much to like here.

The program starts brilliantly. You, the newly elected representative, are sworn into office, introduced to your peers, enter the lottery for office space, and hire staff. You field telephone calls, receive mail, and are asked to vote. The designers obtained the help of California Representative Lynn Woolsey — an inspired choice. In a series of QuickTime video clips she adds a touch of humanity, extending welcoming words to the Congress person, and, later in the program, opening her datebooks to give a sense of authenticity to an elected official's work.

Capitol Hill's graphics are excellent, probably the strongest element in the entire program. The photographs are clear, and the letterbox format attractive. Photographs and information are timely (a picture of the swearing-in of the 1993 freshman class is used). The program includes biographies and pictures of current congressional leaders.

Capitol Hill begins to bog down in the Freshman Orientation section, which discusses the origin of the national government and its workings. Too often one is left asking for more. President Andrew Johnson, we're told, was found not guilty, but of what? Senator Biden's Chief of State, Ted Kaufman, explains, in a video clip, the many pressures faced by



Congress members before a vote. Too bad that a player, as newly elected representative, isn't put through one such difficult decision.

I found myself longing for some details of famous debates. The QuickTime clips of congressional speeches, taken from recent budget debates, are more likely to dissuade any youngster from seeking a congressional seat rather than provide inspiration. The enjoyment of *Capitol Hill* is also hampered by limited flexibility. It doesn't offer any search function, nor does it provide ease of moving back to a previous screen, a serious problem in a program filled with complex narrative. Also, there is no hypertext allowing links to the glossary of terms. One has to switch through the index, disguised cleverly as a personal digital assistant.

Finding ways to interest Americans, and, particularly, the youth of the country, in the political process, is a formidable challenge. *Capitol Hill*'s theme is a good one. With a little more imagination and effort, it could be a fine product.

— Anne Gregor

The Software Toolworks 60 Leveroni Ct., Novato, CA 94949
(415) 883-3000

Apple Pie Music

Depth of Information:
Interface:
Visuals:
Audio:
Overall:

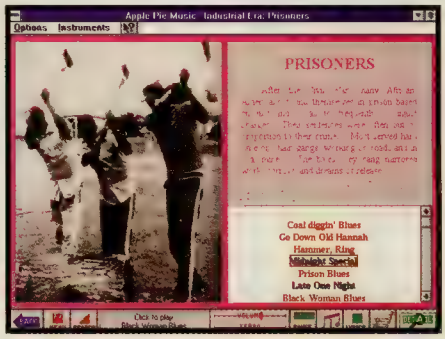
MPC; $95.00 ($69.95 introductory price through April 30)

This little surprise from the mountains of western Virginia is a gem. *Apple Pie Music*, with a dual subtitle of "Music of American History" and "History of American Music," is an aural feast, especially for those with any interest in the musical roots and lore of America's past.

As a multimedia anthology, *Apple Pie Music* features more than 400 songs, 300 images, 54 chapters of text, and over 1000 note cards of related information. There are any number of entry points to the program, and a host of useful features. Especially noteworthy are the graphics (period paintings and photographs) that accompany each song — many of them are a click away from expanding to full screen as you listen to a selection.

Each song is annotated by clicking on Information (source data about the current selection), Lyrics, Composer, and Detail. The latter choice is quite rich, offering historical narrative about the era or period from which the song is taken. The material here is hypertexted and linked not only to composers and terms, but also to songs.

The mass of information and music on this disc is easily accessible and well organized, allowing you to approach the content by historical chronology, century, era, musical style, instrument, composer, and so on. For example, choose Music of American History, then Colonial era, select Native American, and finally choose a song from the pop-up song list. (Incidentally, one of the most haunting pieces on this disc — and there are many — is in this section: the Tlingit Paddling Song resonates with me long after I've switched off my computer.) As the song is playing, you can examine any of the annotative information discussed in the preceding paragraph.



Apple Pie Music offers the songs of prisoners, slaves, soldiers, railroaders, coal miners, loggers, sailors, pioneers, and much, much more. Many of the tunes are archival recordings from the earlier decades of this century, and these are worth hearing again and again. Others, however, are MIDI renditions, and even though Lintronics allows you to select from more than a hundred MIDI patches while the song is playing, these modern digital renderings pale in comparison to the original recordings.

The Search facility is friendly, allowing you to select from musical categories, instruments, composers, and lyricists. Through a kind of graphical boolean search, you can find most anything in the CD-ROM's database. There are many user options, from copying text over to Windows' Clipboard to

queuing up a selection of tunes in any order you like.

While *Apple Pie Music* shines in historical info and musical samples from the 17th to 19th centuries, it's a bit weak in the modern era. While rich in Psalmody and Hymnody selections, for example, the Rock category is scanty, consisting of four selections: Carl Perkins' "Blue Suede Shoes," Roy Orbison's "Ooby Dooby" (his first Sun recording), and two short generic, contemporary selections courtesy of Prosonus (performed by an impressive group of studio luminaries). One would hope that in future versions, the likes of, say, Presley, Dylan, and Chuck Berry will be included.

Apple Pie Music is, of course, a commercial product, but it's also quite obviously a labor of love. Lintronics, a family owned and operated business, has shown great care with its debut title. And it's a must-have for those who love music.

— Lance Elko

Lintronics Software 1991 Mountainside Dr., Blacksburg, VA 24060 (703) 552-7204

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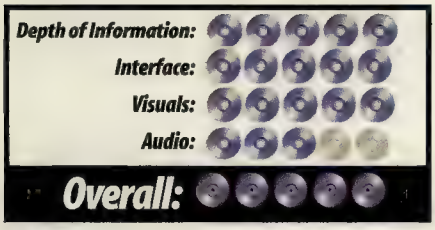
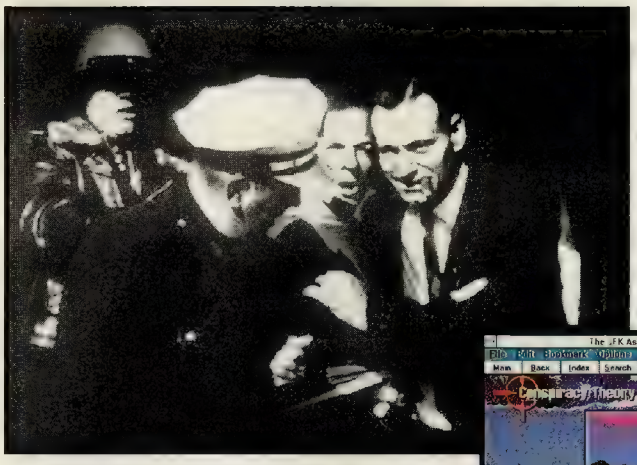
J.F.K. Assassination: A Visual Investigation



MPC; $59.95

Thirty years after the fact, debate about John Kennedy's murder rages on like a Texas brushfire. Polls suggest most Americans doubt the Warren Commission's basic conclusions. Unfortunately, each conspiracy theory that crops up seems to contain inconsistencies, as well as explanations.



Medio's *J.F.K. Assassination: A Visual Investigation* can't resolve our National Mystery, but it does a fantastic job of assembling the information we do have. This is an ideal CD-ROM subject since studies of JFK's death are already multimedia in nature (fragmented evidence: brief film clips, audio recordings, witness narratives, photos, etc.). All of these are used in *J.F.K. Assassination*.

Impressively, this CD-ROM not only amasses reams of data but weights it all properly. The infamous Zapruder film, the investigation's key piece of evidence, is given major focus, in several viewing formats. The 22-second home movie (detailing the entire shooting) can perhaps best be studied through the frame-by-frame format, which conveniently posts a counter in each frame for easy reference.

J.F.K. Assassination collects scads of background photos and pics from the crime scene, and there's a wealth of text, too. Three full books are included, one of which is the entire Warren Commission Report. In counterpoint, Jim Marr's *Crossfire* presents its conspiracy argument (the same one advanced in Oliver Stone's *J.F.K.*), while *The J.F.K. Assassination: A Complete Book of Facts* serves as a capable reference guide.

The program is admirably objective. There's an intriguing section that uses computer-rendered 3-D modeling to recreate different scenarios, and each assassination theory (conspiracy, Single Gunman, etc.) is treated fairly and fully.

Who was responsible for Kennedy's murder? And what was gained from the crime? We're still haunted by these questions, even though many Americans feel satisfied with the official version of the story. If you're interested in drawing your own conclusions, *J.F.K. Assassination* combines evidence and theories in a thrilling multimedia package.

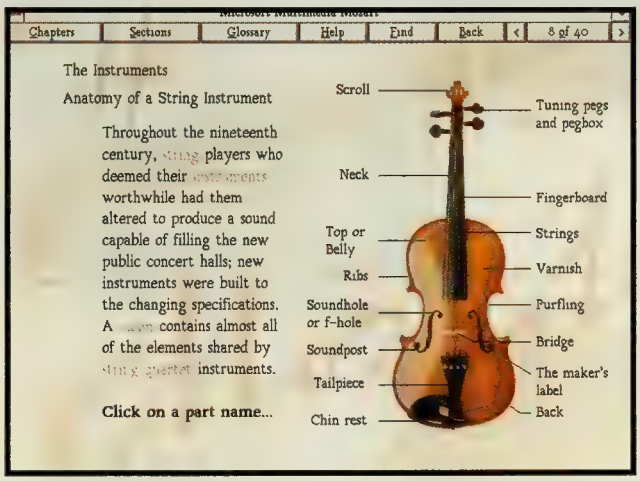
— Phill Powell

Medio Multimedia 2703 152nd Ave. N.E., Redmond, WA 98052 (206) 867-5500

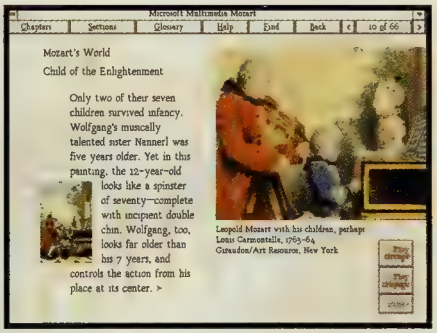
Multimedia Stravinsky
Multimedia Mozart

MPC (Microsoft), $79.95 each; Mac (Voyager) $99.95 Stravinsky, $59.95 for Mozart

When the Voyager Company introduced its *Beethoven: Symphony No. 9* CD-ROM several years ago, it established a new benchmark for music education software. Impressed with the results, Microsoft adapted the HyperCard-based Mac program to run with Windows and called it *Multimedia Beethoven*.



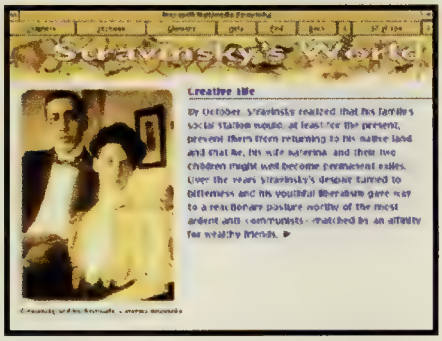
Voyager then released other titles based on the same concept, including *Stravinsky: The Rite of Spring* and *Mozart: The Dissonant Quartet*. These have now been translated to Windows by Microsoft and released as *Multimedia Stravinsky* and *Multimedia Mozart*. Although the look and feel varies considerably between the black-and-white Macintosh and the more colorful Windows versions, the structure and content are essentially the same.



The Stravinsky and Mozart CDs share a number of characteristics, the most important being that they are authored by Robert Winter, who narratively guides the listener throughout the programs. Winter has a natural ability to explain musical concepts in ways that open doors to neophytes without insulting the intelligence of more experienced listeners. This accessibility paves the way to a potentially rich learning experience for anyone who explores each disc's myriad nooks and crannies.

Both titles provide insight into their music through a two-pronged approach — detailed analysis of the music itself and a study of the historical contexts within which the composers worked. Teaching music analysis is often frustrating because of music's inherently transient nature. The Voyager/Microsoft CD-ROMs, however, meet this challenge by allowing you to move quickly and freely among the different parts of the compositions.

Each disc provides a Pocket Audio Guide that lets you listen to, repeat, and compare any section of the composition. By clicking the names in an outline, you can easily compare the Sacrificial Dance to the Dance of the Earth in *The Rite of Spring*. Or you can contrast the Exposition with the Development section in the fourth movement of the Mozart quartet. You might just want to repeat a section several times or branch off into a related topic for further study. The overall effect is much like viewing a football play in slow motion from different camera angles. As Winter points out in his introduction to Stravinsky, "What we've tried to do is give you the same power of instant replay" for music.



Explaining *The Rite of Spring* to someone with limited musical background is an especially formidable challenge. With its evocative sonorities, dense textures, wild rhythms, and dissonant clashes, the *Rite* is often difficult to fathom even for many seasoned listeners. With his Rite Listening chapter, however, Winter wades right in and guides your attention to the important elements that form the composition. Stravinsky's use of motifs, rhythms and accents, transitions, and other elements are lucidly explained with text and reinforced with audio clips.

The chapter entitled Stravinsky's Orchestral World takes you on a tour of the orchestra, describing in detail each of the instrument groups. Audio clips let you hear the instruments and the unique ways in which Stravinsky uses them to create his orchestral colors.

Once you've explored the orchestra and the compositional elements in *The Rite of Spring*, you're ready for A Close Reading. This section plays the entire piece (performed by the Orchestre Symphonique de Montreal) accompanied by a

continuous, real-time descriptive commentary. It's a lot like getting a blow-by-blow description of a sporting event.

Finally, to provide you with a greater sense of context, Stravinsky's World provides background on the composer's life and times — from Russia in the late 1800s to avant-garde Paris after the turn of the century and beyond. The Rite as Dance chapter examines the original 1913 production which — with Diaghilev's innovative choreography and Nijinsky's provocative performance —stunned Parisian society and sparked a riot.

Multimedia Stravinsky has something for everyone. You don't have to read music or understand musical terminology to put this disc to good use. Throughout the program, highlighted words within the text provide links to clearly written explanations complete with audio examples where appropriate. If you don't know what *cadence* means or you'd like more information about *meter*, *counterpoint*, or *rhythm*, just click on the words.

Compared to *The Rite of Spring*, Mozart's Quartet in *C Major K.465* (the Dissonant Quartet) seems rather tame. *Multimedia Mozart*, however, successfully uses the same teaching approach (including links to definitions) as its Stravinsky counterpart. The Instruments chapter examines in great detail the instruments that make up Mozart's orchestra. Quartet Listening teaches about string quartet composition and what to listen for. Mozart's World helps you better appreciate the composer's music by exploring the people and events that shaped his life. A Close Reading takes you by the hand and leads you — with its running commentary — through all four movements of the work as it's performed by the Angeles Quartet.

To round things out, both the Stravinsky and Mozart titles include excellent bibliographies and inventive games that test your newfound knowledge. These CD-ROMs from Voyager and Microsoft illustrate clearly how interactive multimedia can infuse the study of music with greater depth while making it exciting to learn about great works of art.

— David A. Rubin

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Space: A Visual History of Manned Spaceflight

Mac/Windows; $49.95

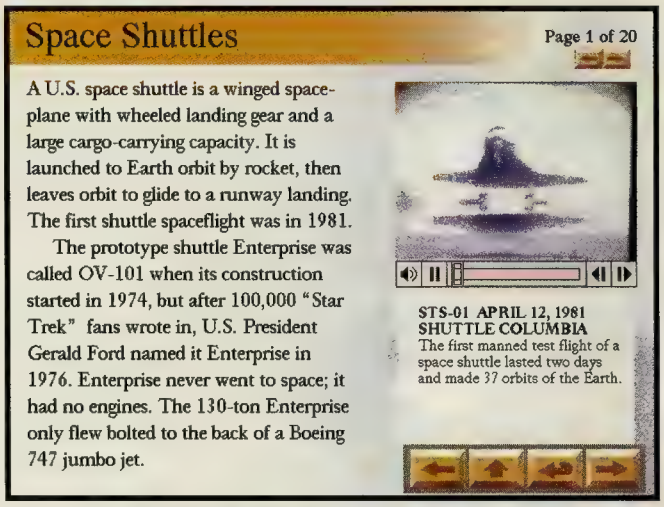
As computer owners, many of us are also spaceflight enthusiasts and science-fiction fans. We're impatient for the present to catch up with the 1950s promises of the future. While we may not zing around in flying cars, or take weekend trips to the moon, at least our computers are far in advance of any predictions by science fiction — in fact, the average desktop PC is already generations ahead of the main computers aboard the space shuttle.

If you can't launch yourself into orbit, you can have the next best thing — you can do it inside your computer. Sumeria's *Space: A Visual History of Manned Spaceflight* is based on extensive NASA footage of actual spaceflight, including liftoffs; scenes of earth from space; racing about the moon in buggies; and astronauts tumbling in zero-gee, performing ad-hoc experiments with jiggling globes of floating orange juice.

Video snippets detail important historical milestones: Neil Armstrong's first foothold on the moon, astronauts and cosmonauts eating borscht from toothpaste tubes during the Apollo-Soyuz rendezvous, even Ronald Reagan chatting with shuttle astronauts over the phone. Noticeably absent was any footage of the Challenger disaster — too fresh a tragedy to deal with just yet.

Although you can watch *Space* continuously, like a television documentary, the interaction affords you far more control and lets you choose the scenes you want to watch — organized in a historical timeline, by Apollo or shuttle mission, from a topical index, or by scientific experiments. Each section offers a video clip and narrative text, which you can page through like an encyclopedia article. You can also search and jump to any word in text or video captions.

Many of Sumeria's newest titles are hybrid Macintosh/Windows titles, using Apple QuickTime video technology, even on the PC, so PC users don't need to have Video for Windows (VFW) installed. QuickTime performs as well or better in Windows than VFW, but is pickier about what video cards and modes it supports. A nice touch is a QuickTime movie that runs while you ponder the menu choices.



The NASA footage is public domain, so you can freely use these movie clips in your own multimedia presentations (but you can't package them for resale). Sumeria has done a nice job of wrapping an attractive and usable multimedia interface around these scenes, but they haven't added a great deal of content. Nevertheless, there's a lot here, one and a half hours of video alone, and you'll spend many happy evenings wrapped up in your own personal space studies program.

— Charles Brannon

Sumeria 329 Bryant St., Suite 3D, San Francisco, CA 94107
(415) 904-0800

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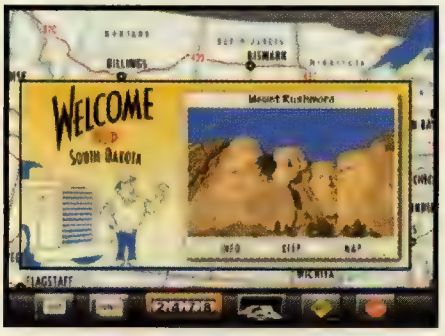
ENTERTAINMENT

Travelrama USA

Entertainment Value:	
Interface:	
Visuals:	
Audio:	
Overall:	

Mac; $39.95

One of the first titles from StarCore (Apple's new CD-ROM entertainment/education software line), *Travelrama USA* is a cross-country postcard game that strikes an even balance between fun and education. What's a cross-country postcard game? It's a little like Carmen Sandiego meets Monopoly played out across a Rand McNally map of the United States.



For game pieces, players choose one of several vehicles ranging from a vintage limousine to an old pickup truck. Each player then receives a list of five postcards that he or she must collect by visiting the appropriate states. A colorful spinner doles out mileage allowances, and occasional airline tickets let you hop long distances.

Each time you arrive at a city, you're offered four postcards that highlight points of interest in that state. And just as with real postcards, the *Travelrama* cards range from the sublime to the ridiculous. The Washington D.C. postcards, for example, include the presidential monuments (Washington, Lincoln, Jefferson), as well as the notorious Watergate Apartments.

If you pass a roadside rest stop, a card (much like a Chance card in Monopoly) pops up delivering some good or bad news. Players can swap postcards and employ various strategies (some of which can get quite involved), but for the most part, this game is simple enough for everyone in the family to enjoy.

The sense of humor in *Travelrama* always keeps it entertaining. And so does the creative and generous use of sound. From the start you're treated to some real foot-stompin' fiddle music and a narrator that sounds like he just stepped out of an old Andy Griffith Show.

As you move from city to city, traveling music plays in the background. And when you arrive at a destination, a music clip gives you a flavor for the region: bluegrass music in Kentucky, mariachi music in New Mexico, and stage-show music for Las Vegas, Nevada. Aside from the music and narration, *Travelrama* also provides a truckload of droll sound effects to keep things moving along.

With its consistently high production values, inventive artwork, and more than 600 great-looking photos, this road-map scavenger hunt makes it fun to explore the U.S.A.

— David M. Rubin

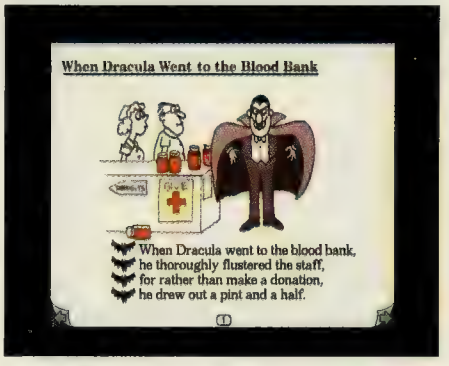
Starcore (Apple Computer), 20525 Mariani Ave., Cupertino, CA 95014 (800) 708-STAR

New Kid on the Block

Entertainment Value:	
Interface:	
Visuals:	
Audio:	
Overall:	

MPC/Mac; $39.95

Broderbund's Living Books series transforms reading into a magical event. Kids do more than just read pages of text — they interact with the story, clicking on words to hear pronunciations and selecting graphic objects to watch amusing animations. Characters speak. Music plays. Pages become dynamic



presentations that personalize the text in ways not possible with printed books.

Earlier Living Books titles (*Just Grandma and Me* and *Arthur's Teacher Trouble*) were award winners. Broderbund takes its Living Book concept one step further with its latest title, *New Kid on the Block*. It introduces children to the wonderfully entertaining poetry of Jack Prelutsky. Dramatic readings, engaging animations, and lively musical clips invite children to explore 17 of Prelutsky's offbeat poems. A paperback version of these poems also ships with the disc, so kids can follow along with the printed text.

While other Living Books include both Spanish and English soundtracks, this volume is presented only in English.

First, children scroll through a list of poems to choose one they want to hear. Then they select "Read to Me" to listen to the poems read aloud, or "Let Me Play" both to hear a particular poem and explore it page by page. Let Me Play fosters active involvement because it encourages children to interact with words and graphic objects on every page.

For example, if a child clicks on the word "flustered" in the poem called

"When Dracula Went to the Blood Bank," he or she will hear this word pronounced and see it performed on screen. When Tillie inhales her fiery chili in the poem "When Tillie Ate the Chili," the cartoon-like special effects are so well-done that you nearly reach for a glass of water. *New Kid on the Block* is an outstanding product, albeit with noticeably fewer hidden surprises per page and much less vivid color graphics than other titles in the series.

Despite the limited number of interactive treasures buried on the pages of this electronic book, *New Kid* succeeds for several reasons. First, the poems are presented with so much gusto and drama that kids learn to appreciate the value of poetry as a literary form. Second, children meet a real author. They hear his voice (he reads four of the selections) and see his cartoon likeness perform "Alligators are Unfriendly," one of the poems on disc. This makes Prelutsky and his poetry more real to kids unaccustomed to thinking of authors as living people. For its humanizing treatment of the poetic form, *New Kid on the Block* is a multimedia tour de force. It's sure to make kids want to read other poems and perhaps even write their own.

— Carol S. Holzberg

Broderbund 500 Redwood Blvd., P.O. Box 6121, Novato, CA 94948 (800) 521-6263

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Mario Is Missing

Entertainment Value:
Interface:
Visuals:
Audio:
Overall:

DOS; $79.95

After reading the documentation for *Mario Is Missing*, I expected it to be a valuable and fun-filled educational tool. Disappointment set in early.

Mario Is Missing owes much to the Carmen Sandiego games in its approach to teaching geography. In the *Mario* scenario, Bowser and his cohorts are looting the world of famous artifacts and landmarks, using the proceeds from their work to hoard hair dryers. The hair dryers will be used to melt Antarctica, flood the planet, and create a global mess.

Mario is captured and hidden by Bowser's Portal system, which can beam people to any part of the globe. Luigi must use the Portal system to find his brother Mario, recover the loot, and foil the plot.

Whereas Carmen Sandiego sends players to a real-world reference manual, *Mario* contains its clues and educational materials in on-screen leaflets and pamphlets. These must be read for clues.

The game's documentation suggests that parents share newspaper articles and current events relating to the places Luigi visits, and use a map or globe to point out the locations to the child. I liked this advice and was doubly pleased that all spoken material also appears in comic-strip balloons, a move to reinforce reading skills.

However, after the introduction, I found a disappointing inconsistency — the spoken word does not always match the written word and can lead to confusion.

Graphics and animation are good, and game play is almost instinctive, though audio is spotty. I suspect the modulation problems are due to the constant arcade-game music stealing interrupt cycles. You may elect, during setup, to not use the music portion.

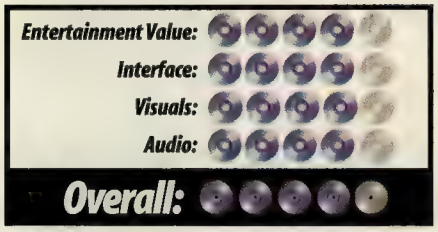
Mario Is Missing requires a good deal of RAM, and even with 585K free, I could not get all the way through the game. Further, the CD-ROM as received (in a standard retail package) would not run beyond the title page. I requested and received a fix from The Software Toolworks, but this did not cure all the ills. I followed the advice given during setup and disabled all TSRs, but I think no game is worth this much up-front effort.

Best advice: Wait for version 2.0.

— Ervin Bobo

The Software Toolworks 60 Leveroni Ct., Novato, CA 94949 (800) 234-3088

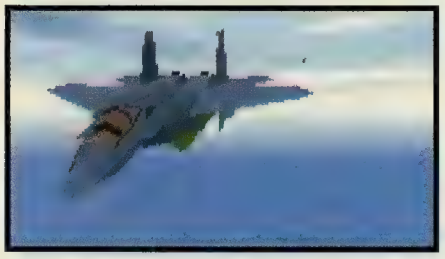
F-15 Strike Eagle III



DOS; $59.95

Some flight sims get you in the air and shooting in seconds, with the emphasis on playability. Others strive for hardcore authenticity, requiring patience, perseverance, and many hours of practice, the reward being added realism. Each approach has its adherents.

MicroProse has struggled between these two camps, aiming to produce authentic sims with enough difficulty settings to please the load-and-go crowd.



They failed in *F-15 Strike Eagle II*, making it more an arcade-style shooter than a flight sim. They have succeeded admirably with *F-15 Strike Eagle III*, now available on CD-ROM with some attractive enhancements.

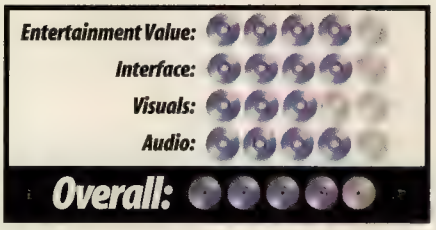
For those already familiar with *F-15 III*, the major changes don't really affect game play much. A tour-de-force introductory sequence has been added (though it takes forever to load each section into memory), along with a 25-minute narrated slideshow on the history and characteristics of the F-15, and a tutorial. All major bugs from the floppy-disk version have been fixed, and a little bonus comes in the form of several new missions based on the 1993 air strikes in Iraq. The best news, however, is that it is playable from the CD, with only a 3-megabyte hard-drive requirement.

Those who haven't yet played *F-15 III* should know that it's a top-of-the-line flight sim, straddling the gap between the challenging and authentic *Falcon 3.0* and the somewhat easier *Aces of the Pacific*. The two-seater F-15E, known as the "Mud Eagle" for its low-altitude strikes, is a good dogfighter but a superior ground-attack fighter. Missions in Iraq, Korea, and Panama provide a nice mix of terrains and missions, most of them being ground strikes. The action gets thick and heavy over enemy territory, with AA fire and interceptors both aiming to knock you out of the sky. Plane and terrain graphics are nicely shaded, and the enemy AI is good enough to keep things challenging. All in all *F-15 Strike Eagle III* is a good middle-of-the road sim for buffs and newcomers alike.

— T. Liam McDonald

MicroProse 180 Lakefront Dr., Hunt Valley, MD 21030 (800-879-PLAY)

Sing-Along with: Elvis! (The King)



MPC; $19.95

Are you lonesome tonight? If so, consider coughing up 20 bucks and picking up *Elvis! (The King)*, one of the soon-to-be populous series of standalone CD-ROMs from the people who brought us *PC Karaoke*. If you can't find it, you can hound-dog your dealer until he's all shook up, and if it doesn't fill your heart with burning love, you can always return

it to sender. Thank you verry, verry much, ladies 'n gentlemen.

Enough already with the stupid Elvis jokes. This is a good collection of ten Elvis hits, and the band cooks right along as you emulate the Great One. As in Sirius' debut CD-ROM, *PC Karaoke*, the lyrics display on the screen as a guide for singing, and if you play the CD-ROM through your stereo with a microphone mixed in, it sounds almost like you're live on stage. In fact, it's quite easy to imagine you're on stage with women swooning to your every pelvic gyration.

Elvis! (The King) features PC Karaoke 4.0, which fixes earlier problems and improves the interface. Included now is an on-screen mixer for CD-ROM and microphone volume, and you can adjust the volume while the song is playing by using the up and down arrow keys. Furthermore, you can exit songs more easily, and you can change text colors and background bitmaps. This is now a more workable karaoke product.

But its charm still lies in pretending you're one of the greats, which of course is the appeal of karaoke itself. I still can't imagine doing any of this in public, but for those moments of wishing you could be on stage in front of a hot band, or for parties in which people don't mind demonstrating their vocal atonalities, this is practically perfect.

— Neil Randall

Sirius Publishing 7320 E. Butherus Dr., Suite 100, Scottsdale, AZ 85260 (602) 951-3288

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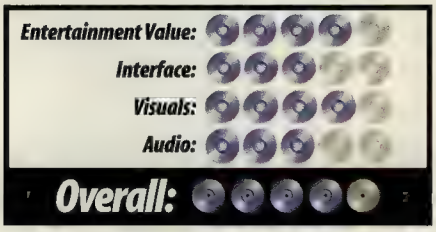
Team NFL: 1993



Mac/Windows; $29.95

It has been estimated that over half of this nation's spouses find themselves without a significant other at hand on Sundays during football season. Almost as many are periodically forced to endure computer widow/widower syndrome while their partner putters with the computer.

For those so afflicted, *Team NFL* is a double nightmare on CD-ROM. If you're

a certified football and computer junkie, block out the better portion of a fortnight, stock up on your favorite carbonated beverage, kick back, and relax.

The *Team NFL* CD-ROM is billed as "The Official Magazine of the National Football League," and aptly lives up to the same slick standard of quality one is accustomed to seeing in "Official NFL" video productions.

Team NFL's interface is simple — any couch potato who can master the art of channel flipping will have no difficulty navigating the "hot button" menu system. The addition of a search facility and hot links within the text material would have been a welcome addition.

The material is divided into quadrants that lead to in-depth articles and other information. Complete scouting reports are included for every team in the NFL. The Feature Article section is home to ten in-depth articles ranging from profiles of the game's hottest players and coaches to human interest "where are they now?" pieces. The writing and content are excellent. Almost all of the written material is good enough to keep even the casual browser reading on.

Complete season schedules can be called up, as well as all team statistics from 1992. The scope of the historical figures might not satisfy die-hard stat jocks, but are enough for an armchair quarterback's view of past performance.

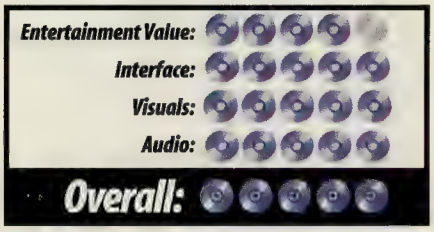
Team NFL's still photographs are as sharp as any that have graced the cover of the major sports mags. The program also makes effective use of sound, but the audio quality varies considerably, with some passages exhibiting noticeable hiss and distortion. Full-motion video is put to good use as well, including some artfully original "morphing" sequences, but many of the play-action video clips are excessively choppy.

In our playbook, the "1993 Preview" edition of *Team NFL* is an uncontested touchdown.

— Arlan R. Levitan

Optimum Resources 5 Hiltech Lane; Hilton Head, SC 29926
(803) 785-7441

The Tortoise and the Hare



MPC/Mac; $39.95

The Living Books series from Broderbund are the standard by which all multimedia children's books are judged. These interactive stories are colorful, whimsical, inventive, and marvelously entertaining. Every page in a Living Book contains hidden audiovisual

surprises that encourage exploration and reward curiosity. Objects animate in humorous ways. There are interesting characters to meet. A friendly voice reads story text aloud and pronounces selected words. While Living Books are intended primarily for entertainment, they are so well-crafted with interesting side stories, high-quality graphics, and easy-to-read text, they inevitably build reading skills.

The Tortoise and the Hare is one of the latest additions to Broderbund's Living Book series. This CD-ROM retells Aesop's classic story of the race between a molasses-slow tortoise and a fast-talking, speedy hare. It uses humor, clever characterizations, and snappy dialog to teach kids that success depends on hard work and determination, as well as skill. The tortoise wins the race because he

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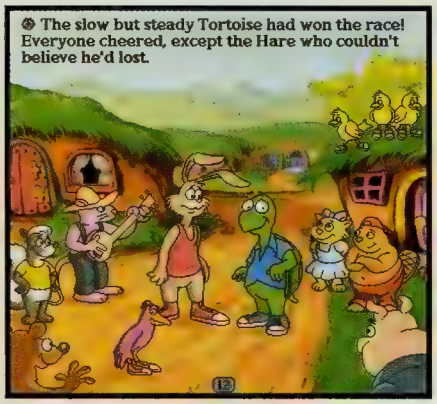


plans ahead and doesn't waste time.

Like other Living Books, *Tortoise* invites children to listen to the story read aloud (in either Spanish or English) or to "play inside the story." If you choose "Read to Me," the cursor disappears and the story plays on screen automatically. If you choose "Let Me Play," you participate in the presentation, exploring the book's 12 pages on their own. Click on icons to page forward or backward, and click on graphic objects to watch humorous on-screen animations. No matter which presentation mode you select, the computer reads story text aloud. Children can follow along by watching words highlighted on screen as they are spoken, or by reading from the pages of the companion text that ships with the CD.

Tortoise is lots of fun. Even very young children (or their serious-minded parents) will enjoy discovering what each page has to offer. Every page has several cartoon-like animations. Tomatoes sing, a raccoon paddles a canoe, a field mouse takes a shower in a waterfall, and much more. Toe-tapping music and terrific sound effects round out the presentation.

Although this story was written more than 2500 years ago, its lessons are timeless. Broderbund has done a marvelous job of adapting the story as a multimedia computer presentation.

— Carol S. Holzberg

Broderbund 500 Redwood Blvd., P.O. Box 6121, Novato, CA 94948 (800) 521-6263

Busytown

Entertainment Value:
Interface:
Visuals:
Audio:
Overall:

DOS; $59.95

The notion of a children's village is always appealing to the younger set. It's a place children can call their own, a cozy space where kids can emulate the sophisticated world of grown-ups — with the quirky, endearing perspectives of childhood.

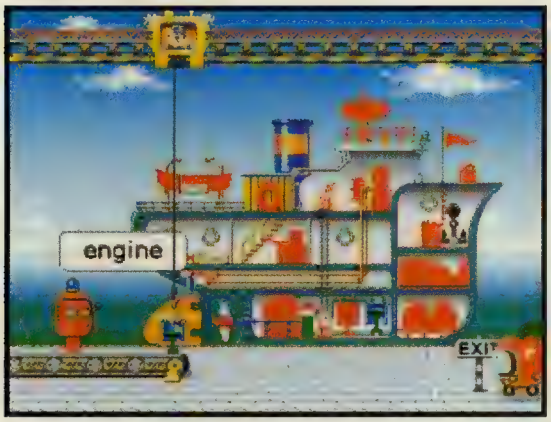
Busytown, by popular children's

author Richard Scarry, provides just such a place, a snug, byte-sized town. Led about by two genial characters — Huckle Cat and Lowly Worm — children can visit a hospital, drive a delivery truck, build a house, operate a gas station, or figure out how to prepare a mug of hot chocolate with a contraption straight out of Rube Goldberg.

Busytown is one of the first CD-ROMs from Paramount Interactive and is designed for children age three to seven. If you believe everything in the accompanying Parent's Guide, a young child playing *Busytown* will catapult into the third grade after several sessions. But it's best simply to ignore the propaganda and enjoy the activities.

A lively opening village view is the

entry-point for a dozen different play areas, ranging in difficulty from helping gusts of wind blow birds and balloons across a park to building Captain Salty's Ship, with machinery needing proper installation, a hull requiring painting, and a crew that must be placed at their stations. In other play areas, a school bus needs a tire inflated and there's a house to be built, requiring everything from a hot-water heater to a chimney and roofing shingles.



Although a flashing star steers children toward the right moves, players are sometimes left to make their own choices. The program gives children the room to make mistakes — and to correct them. Lots of sound effects and music — some of it the annoyingly tinny synthesized kind — catch children's attention. The graphics are colorful and full of strong, simple lines. There are a baker's dozen of simple tunes to memorize in a computer jukebox.

Busytown is very much in the Sesame Street mold, a program designed not for random wanderings or reflection, as found in the classic *Manhole*. This village is an active place, where characters go about their daily business, and young children will be more than happy to join them.

— *Anne Gregor*

Paramount Interactive 700 Hansen Way, Palo Alto, CA 94304 (800) 821-117

Eye of the Beholder Trilogy

Entertainment Value:
Interface:
Visuals:
Audio:
Overall:

DOS; $80.00

One of CD-ROM's immediate strengths is its ability to deliver anthologies of previously released programs. In many cases, these titles are ones which you might not have been willing to buy individually, but do offer a superb value when bundled together. SSI's *Eye of the Beholder Trilogy* is a good example of this. Released over the past few years to considerable acclaim, the three *Beholder* games are now on one CD-ROM, and they collectively offer hundreds of hours of mainstream fantasy role-playing (FRP) enjoyment.

In all three games, you take command of a party of adventurers and make your way past one obstacle after another to stop a deadly evil. What has made the *Beholder* series so successful is its realistic point of view: the walls, doors, levers, and monsters look like you expect them to look, and the 3-D rendering as you journey through the dungeons makes the experience even more worthwhile. Sounds are important, too. If you aren't listening, you won't hear things coming toward you, which means your gaming session could end rather abruptly.

Like almost all FRP games, the *Beholder* titles take a long time to complete, and it's unlikely you'll get all the way through without getting bogged down and frustrated. *Beholder I* and *II*, however, provide a strong enough mix of battle, puzzle, and intrigue to keep you going, so frustration is always temporary. *Beholder III* is less successful in this regard, essentially a seemingly non-stop series of battles with little purpose.

The interface of the games improved as the series developed, but while many tasks are easy and well-designed, others are strangely difficult. Battle happens in real-time, which means that monsters don't wait for you to move; and when controlling four characters, you'll have to be extremely adept with your mouse. Be sure to have your magic spells ready to go before you head into battle; otherwise you may not get a chance to use them.

Except for the fact that they take up considerably less hard-drive space than the floppy-disk versions, nothing has been done to spiff these programs up. They haven't been integrated, their interfaces haven't been standardized, and even their installation routines differ from one to the other. But spiffing them up isn't the point. This CD-ROM is nothing more and nothing less than a single collection of an extremely important FRP series, and a cost-conscious one at that.

Eye of the Beholder was once the state of the art in FRPs. It isn't any longer, but it's still head and shoulders above much of the competition. If you could buy only one FRP product for the next six months, I wouldn't hesitate recommending this one. It'll keep you busy, it looks great, and it captures the old-style essence of hack-'n'-slash fantasy role-playing.

— *Neil Randall*

SSI 675 Alamanor Ave., Suite 201, Sunnyvale, CA 94086 (408) 737-6800

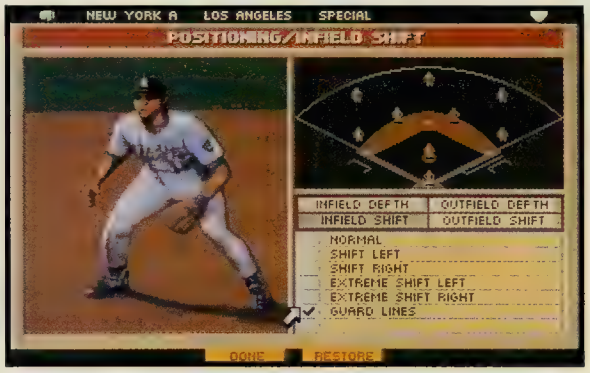
Tony LaRussa Baseball II

Entertainment Value:	
Interface:	
Visuals:	
Audio:	
Overall:	

DOS; $80.00

Tony LaRussa Baseball appeared on the crowded PC baseball scene a few years ago, and (while not perfect) was instantly among the best. In 1993, *LaRussa II* was released, correcting minor problems and adding significant features. Now comes the CD-ROM version, and just about everything is as it should be.

The "just about" has to do with the fact that *LaRussa II* isn't licensed from Major League Baseball. This means that



the players depicted in the game aren't the players you see on the field today. Instead, the teams in this game are comprised of retired players, who are rated for their career-long capabilities. While the decision not to license the game may well be an intelligent financial one, it does nothing for player enjoyment.

Apart from this one fact, however, *LaRussa II* is excellent. The interface makes sense, with pitches easy to throw yet offering great variety, and with fielding considerably more logical than in many previous baseball simulations. The game features running commentary by the digitized voice of Ron Barr, and large, full-color replays show close plays in detail (although they don't always match the play).

You can play a game as manager, player, or both together, with the last option taking the longest to play. If you want to play out an entire season, you can specify which games you want to play, and the computer will handle the rest. Your team consists of 40 players, and

after the September 1 deadline (in game terms) all are available for duty.

The CD-ROM version adds some nice touches. The Ron Barr commentary has been expanded to double its original size, which means that, as in real life, he practically never shuts up. The disc contains 500 digitized player photos, an extremely welcome feature. The number of replays has also been increased.

In addition to the game itself, the CD-ROM includes all of the expansion floppy disks that had been marketed as supplementary products — all 28 stadiums are available on the CD-ROM, and the Fantasy Draft program helps you set up and manage the draft for a fantasy league.

LaRussa II is a must-have for any fan of computer baseball. Now, if SSI would only license the product through MLB, it would truly shine.

— Neil Randall

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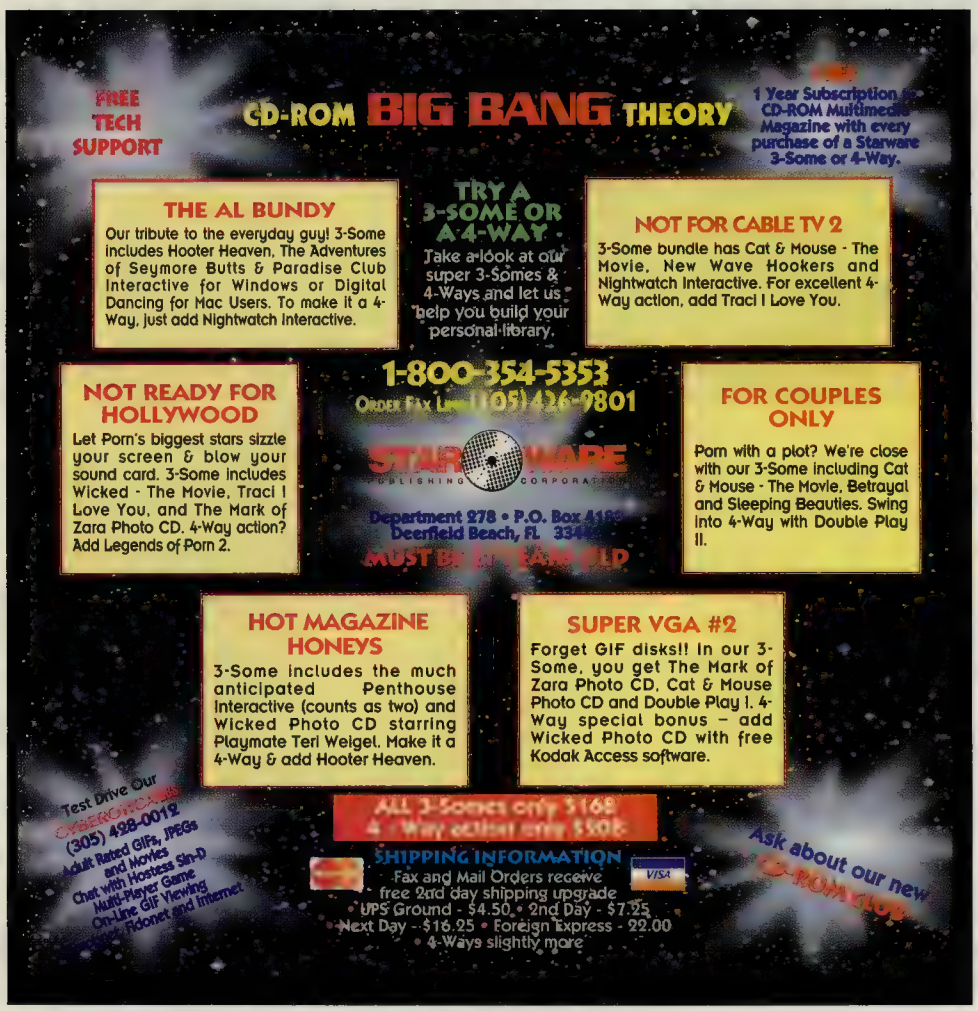
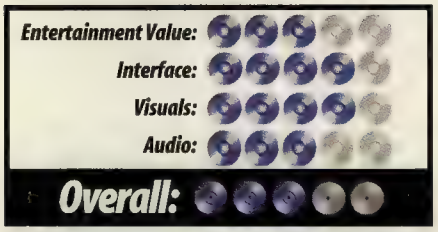


Product Information Number 136

Great Naval Battles of the North Atlantic: 1939-1943



DOS; $70.00

The CD-ROM version of this historical battle simulation contains not only the original program from floppy disk, but also includes three supplementary scenarios, previously sold as separate add-on disks. That's the good news. The downside is that *Great Naval Battles* uses the CD-ROM primarily as a storage device — and it isn't just resource-hungry; it's positively system-ravenous.

The program dumps 120 files, using nearly 13 megs of hard-drive space (in total, 20 megs are needed), and then requires you to adjust all your start-up files to provide it with enough RAM and EMS. Once you're running, though, *Great Naval Battles* is an interesting hybrid of simulator, wargame, and alternate-history scenario explorer.

The core game allows you to command either British or German surface fleets as you refight the famous engagements that took place in the first half of the War in the Atlantic: the Battle of the River Plate, the hunting of the Bismark, Arctic convoy action, and so on. There's also a scenario editor, which lets you alter the parameters of existing battles or devise your own. You could, for example, see what might have happened if British warships had been waiting in ambush near the Straits of Dover when the Prinz Eugen and the Gneisenau made the famous Channel Dash.

The "America in the Atlantic" scenario extends the possibilities of experimenting with alternative WWII history. What if, this scenario proposes, the main might of the American fleet had not been tied down in the Pacific but had been free to pursue the Kreigsmarine across the icy Atlantic? Now you can command, say, the Iowa in a face-off with the Scharnhorst. Of course, this really requires a fully complementary land-war simulator, since a stronger American presence in the Atlantic would have fundamentally altered the progress of the war in the Mediterranean and on the Eastern Front.

The Superships section pushes the alternate scenario options to the limit. It begins with the supposition that an uneasy peace is being maintained for seven years beyond the historical fact, while all sides concerned rearm to the hilt and build superships for the coming conflict. War breaks out in 1946, and you can engage monstrous battlewagons to determine the course of this What If? war.

The various control systems are not very intuitive, but an extensive manual and quick-reference charts quickly bring you up to speed. The original disk version had a rather bad reputation for bugs, but all this seems to have been ironed out of this CD-ROM edition. There's plenty here to entertain and inform the naval wargame enthusiast, but its real strength and appeal comes from the rich diversity of its alternate history scenarios.

— David A. Wade

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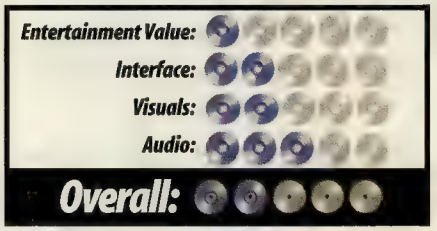
Dandy Dinosaurs



MPC/Mac; $59.95

Dandy Dinosaurs' colorful packaging includes all of the elements that brain-dead advertising execs imagine to have instant kid-appeal. What more could one ask for than smiling dinosaurs, a rainbow, and a cellophane window through which peeks Max the Dragon, a user-friendly, "non-toxic" plush doll?

Unfortunately, things go rapidly downhill as soon as the shrink-wrap comes off the box. The stuffed animal "bait" has all the quality one would normally associate with a carnival sideshow prize. An afternoon with a precocious four-year-old was enough to split Max's seams.

This CD-ROM's primary elements might have passed muster five years ago, but compared to competing titles, its content is severely lacking in depth and meaningful play value. Max's CD-ROM software world consists of an illustrated story, a handful of games, and an assortment of craft projects.

The story of Max the Dragon and the "Dandy Dragon Day" is, to put it bluntly, a crashing bore. The artwork is pedestrian,

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DEALER INQUIRES Welcome

Product Information Number 118

the narration is uninspired, and the plot has trouble holding the attention of anyone over five years of age.

The four shallow diversions that comprise the "games" section of *Dandy Dinosaurs* take about two minutes each to play, and offer no real motivation to be played more than once. The interactivity level is minimal and tends towards strict linearity.

The "crafts" section consists of 11 projects for kids that are illustrated by full-motion video clips. About a third of them are mildly interesting, but the rest are strictly throwaways.

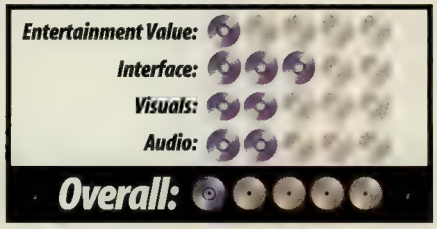
The back of the *Dandy Dinosaurs* box promises "Exciting Stories, Stunning Games and Innovative Crafts." Sorry Max, but three strikes is considered an out in this ballpark.

— Arlan R. Levitan

Multicom Publishing 1100 Olive Way, Suite 1250, Seattle, WA 98101 (206) 622-5530

◆ ◆ ◆ ◆ ◆ ◆

C.I.T.Y. 2000: London



DOS; $64.95

City in Trouble Year 2000 or *C.I.T.Y. 2000: London*, a photographic tour-of-London-cum-game, is an adequate idea gone horribly awry. Like the scientist of *The Fly*, Aditus has tampered with the natural course of things (in this case, graphic adventure games), with duly grim results. This game is not at all pleasurable.

Using a combination of still photos and video clips, *C.I.T.Y. 2000* tells the "story" of America's top spy: Jon Daring. (Why our top spy looks, dresses, and acts like a member of the Beastie Boys is never quite explained.) It all begins with a video sequence of a protracted gun battle with a drug kingpin named Roberto Scala. Apropos of nothing, we are zipped to London, England, where a disease known as "Harper's Syndrome" is causing Londoners to go loopy. Apparently, *someone* has laced *something* with a drug that causes the syndrome, but no one's quite sure.

Enter Jon Daring. You, as Jon, travel about London, seeing sights, walking into places, and waiting for something to happen. The result is a game. Or maybe it's a slideshow of someone's lousy vacation snaps. It's hard to tell at times.

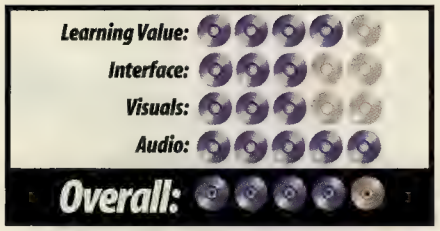
Basically, Jon navigates London with arrows that take him from one photo to another, each furthering his journey. The entire sequence is tracked with a postage-stamp-sized map. At certain points, a video scene plays and Jon gets info and inventory items, but these are few and far between. In between, you can tour Trafalgar Square, the British Museum, and the Tower of London, ad nauseam. Unfortunately, the pictures are so stultifyingly boring that none of these side trips is even remotely interesting. The plot is a joke, puzzles are almost nonexistent, and most icons (talk, pickup, etc.) are completely useless. If there's a point to all this, I couldn't find it, and *I really looked*. But the scariest part of this product may be the announcement on the back of the package for *C.I.T.Y. 2000: Paris*.

— T. Liam McDonald

Aditus 5756 Royalmount Ave., Montreal, Quebec, Canada H4P 1K5 (514) 737-8360

EDUCATION

TriplePlay: English, French, Spanish



MPC; $89.95 per package

Footloose and fancy-free with knapsack on my back and a Larousse French-English dictionary in my pocket — that's how I traveled through France in the summer of 1968. But it's difficult to learn new vocabulary from a dictionary. You can't hear pronunciations, the all-text presentations are tedious, and, if explanations are not given in context, it's hard to figure out correct usage.

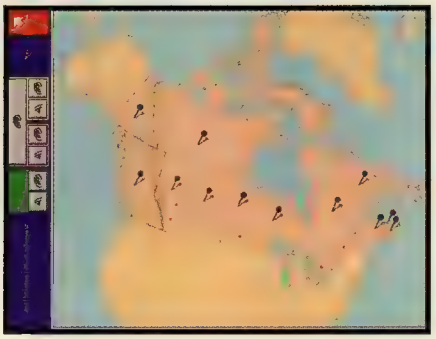
With a *TriplePlay* CD-ROM, you can immerse yourself in a language and have fun while you learn. This multimedia series uses interactive games to teach beginning to intermediate English, French, or Spanish (separate CD-ROM packages). Activities are designed for ages nine to adult. Icons and spoken directions (rather than written instructions) explain how to navigate the program. You can listen to pronunciations by native speakers, record and play back your voice to hear how it compares with native speech, practice at three levels of difficulty (each one building on topics learned previously), and study vocabulary for six familiar topics (food, people, places & transportation, numbers, activities, and home & office).

Each *TriplePlay* disc takes this same approach, and each has a look and feel identical to the others. After starting up, the program presents a colorful palette containing icons for vocabulary topics (down the left side of the screen). Game offerings are displayed in a menu of black and white icons to the right of the topic palette. These games are organized in groups labeled I, II, or III (referring to different skill levels). When you select a topic, its related games highlight in the game menu. After you point and click on a specific game icon, the program moves you to the play environment.

You select the words you want to focus on for a particular activity. Most games have a practice mode to help you explore vocabulary before play. After a practice session, you play to see how much you've learned. Many of the games play at several levels of difficulty.

TriplePlay activities are quite entertaining. They test many skills, including memory, concentration, and identification. You may be required to rearrange a series of objects in an order specified by the computer, remember where items were placed, or select an object that matches a target word or expression. You work with nouns, verbs, and phrases. Sometimes you play alone. At other times you challenge the computer or a friend. There are occasional clues. You receive positive reinforcement for correct answers and encouragement to try again for incorrect answers — all in the language you're trying to learn, of course.

Level I's emphasis is on training your ear and perfecting pronunciation. In Level II, you learn more words to describe objects and actions introduced in Level I. Level III immerses you in realistic dialogues with review vocabulary. Each



TriplePlay program teaches more than 1,000 words and phrases. My only complaint is that the packages do not include a printed list of all words and phrases found on the corresponding CD.

TriplePlay games take the drudgery out of learning vocabulary, and the concepts taught are well reinforced. If you're looking for an entertaining way to master French, English, or Spanish vocabulary, these multimedia products are effective — and plenty of fun to play.

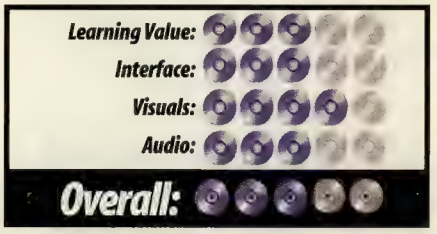
— *Carol S. Holzberg*

Syracuse Language Systems 719 East Genesee St., Syracuse, NY 13210 (315) 478-6729

♦ ♦ ♦ ♦ ♦ ♦

Peter's Adventures

Peter's Numbers Adventure
Peter's Alphabet Adventure
Peter's Magic Adventure



Mac; $29.95 each

These three titles represent Apple Computer's first foray into edutainment software publishing, and the

Cupertino company is being cautious indeed. The colorful but generic packaging of these discs sports no Apple or Starcore (Apple's publishing division) logo — no developer logo at all, in fact. Only the most alert consumer would know that this was an Apple product. Plainly, Apple is hoping that a low-key entrance into the CD-ROM market will not alienate third-party Mac developers. Plus, Apple is still building its own creative staff in the U.S., and has turned to a small French developer — Arborescence — to get some product into the retail channel. Perhaps Apple should have waited a little longer.

Peter, a relentlessly curious and cheerful tyke with a spiky Euro-comix hairdo, leads kids through these three learning adventures. Like most software aimed at preschoolers, the Peter adventures use all the tricks of multimedia — high interactivity, color graphics and animations, digitized videos, voices, music, and sound effects — to teach beginning number, letter, and manipulative concepts. All the discs contain versions for several languages.

The adventures are certainly colorful and surprising, but don't always make much pedagogical sense. In *Peter's Numbers Adventure*, for example, there are nine "number islands," each with its own game. But the games don't have anything directly to do with the number for each island. In fact, many of them don't have much to do with numbers at all, instead stressing 2D spatial memorization or manipulative skills.

Apple ought to look more carefully at the content of these discs, too. *Peter's Numbers Adventure* has politically incorrect depictions of Native Americans and women, stuff that probably seems innocent to the developers at Arborescence but that might raise hackles over here. Not to mention the pronounced emphasis on being eaten by monsters in *Peter's Magic Adventure*. Does Apple really think preschoolers want to see a snake spring out of nowhere and devour a lamb? My four-year-old daughter sure didn't.

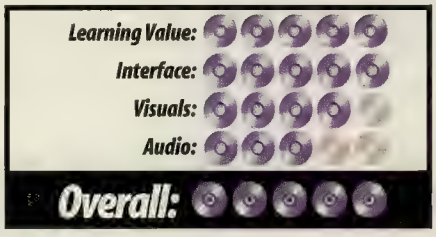
Of the three discs, *Peter's Alphabet Adventure* is probably the best bargain, being relatively free of the problems mentioned above. But none of these discs stand out among the crowd of CD-ROM totware now flooding the stores. Apple will have to do better to make a name for itself in CD-ROM edutainment.

— *Steven Anzovin*

StarCore (Apple Computer), 20525 Mariani Ave., Cupertino, CA 95014 (800) 708-STAR

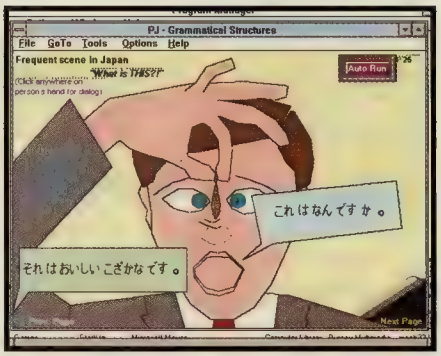
♦ ♦ ♦ ♦ ♦ ♦

Power Japanese 2.0

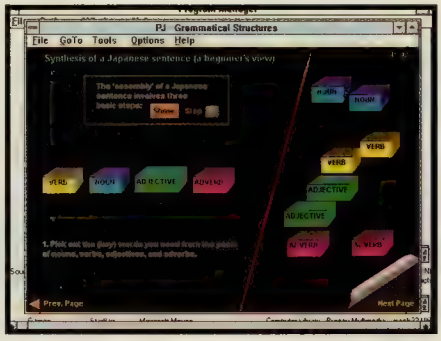


Windows; $389.00

In a marketplace that tends to reward CD-ROMs that prominently feature professionally animated artwork, live-action video, and digital sound, it's easy to lose focus and perspective. Whether the matter at hand is entertainment or education, being slick is no guarantee of success.



Without nary a nod to video, lushly orchestrated audio, or hyper-realistic art, *Power Japanese* offers proof positive that the multimedia concept is a powerful tool that can break down formidable barriers to learning.



Anyone who has tried to learn via traditional language instruction methods can attest to the difficulty of acquiring fluency in Japanese. You can spend countless hours with dozens of cassettes and workbooks and get less than gratifying results. After a few months, you'll probably be able to ask how to get to the bullet train as well as any Western barbarian, but still not have a clue as to the language's structure, or how social and situational contexts effect what should be said and how to say it.

The design and layout of the *Power Japanese* screens are simple and delightfully eclectic. Sound is limited to playing back the syllables, phrases, and sentences at hand. The program engine is Asymetrix's *Toolbook*, an object-oriented

desktop presentation system that has been around since Windows 3.0 hit the streets. *Toolbox* apps tend to be linear in nature, but given the material at hand, that can hardly be considered a limitation.

Power Japanese starts the user off with Hiragana, which are the Japanese equivalent of phonetics. The module concentrates on the sounds that make up the basic building blocks of the language, and the symbols that represent them. By the end of the section, the user is able to mentally break spoken phrases into their constituent parts.

With a solid foundation to build on, the student moves on to Dialogs and Grammar, where things get really interesting. The basics of Japanese grammar are presented in a lucid and logical manner, which surprisingly provides a great deal of insight into the cultural differences between East and West. Sentence structure and elements are covered well enough to invest the user with the ability to carry on simple colloquial conversations.

"The Homestretch" focuses on building more complex sentences and using the diversity of Japanese verbs to get your own ideas across. The section includes a good deal of fascinating information on Japanese culture and customs, and concentrates on using the language skills that have been developed to this point in dealing with everyday situations.

The CD-ROM version of *Power Japanese 2.0* is decidedly more convenient than the floppy-disk version, which requires juggling 14 disks during installation. Since sound can be read directly off the CD, it's also uses a lot less hard-disk space — 6 megabytes vs. the disk version's 30.

Some purchasers of *Power Japanese 2.0* may have to wait a few weeks before receiving the full benefit of the new version. The first "production" shipment did not include some of the advertised new features. Missing were the promised Japanese word processor, 10,000 word on-line Japanese/English, English/Japanese dictionary, and a custom drill utility. If the copy you purchase lacks those features, be sure to mail in the registration card in order to receive the updated software. Don't worry about that short wait. Bayware has an excellent reputation for end-user support, and at least a month of study will pass before you're likely to need those functions.

Power Japanese is a godsend for both neophyte students and those who have been floundering in a sea of Japanese grammar tapes, for months or years. It provides a nearly painless road to acquiring a firm understanding of the basic mechanics of conversational Japanese. If you're interested in making your language sun rise, *Power Japanese* can keep those bilingual skills sharper than a new set of Ginsu knives.

— Arlan R. Levitan

Bayware P.O. Box 5554, San Mateo, CA 94402
(415) 312-0980

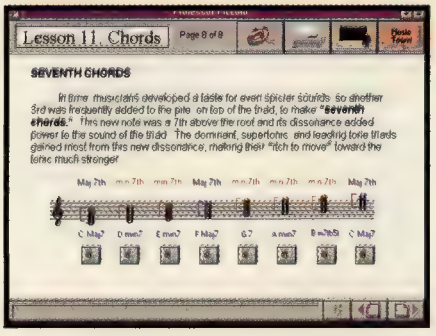
♦ ♦ ♦ ♦ ♦ ♦

The Musical World of Professor Piccolo

MPC; $69.95

While most of us enjoy music, learning about it can be a somewhat mysterious process. Opcode Interactive removes much of the mystery and sets up a surprisingly effective self-teaching environment in its new Professor Piccolo music education CD-ROM for ages 8 to adult.

The design of *Piccolo* uses familiar point-and-click methods that make skillful use of the sound capabilities of the MPC standard.



Once past the credits animation, you're taken to Music Town, where you can click on one of several buildings to learn about Rock, Jazz, Symphony, or Church music style and history; browse the Library to research musical terms and instrumental sounds; attend Music School and learn about harmony, theory, and notation; then test your skills by playing a quartet of challenging musical games.

Each area includes clickable buttons that play stereo soundtracks directly from

the CD. In Symphony Hall, you can click on an orchestra illustration to hear instrumental sections. In Rock, a four-member band plays solo and together to show how musical parts join into the whole. In Music School, you learn how chords are built, then click a button to hear the results.

In the music history departments, clicking on a mouth icon triggers a narrator to read the explanatory text. This is especially useful for young students with limited reading skills. Unfortunately, this option is not available everywhere. It's missing entirely in the Music School. While young ones may not be ready for the intricacies of music theory, music is not a respecter of age. A precocious young musician could study jazz and classical music, but would not be able to learn harmony from *Piccolo* without sufficient reading skills.

The Games! section includes enjoyable drill and practice challenges in instrument recognition, music trivia, and ear training. Overall, *The Musical World of Professor Piccolo* is remarkably broad-based in the musical subjects it teaches. After successfully exploring all its areas, you or your child will have a wide introductory knowledge of a range of musical topics, as well as basic to moderate listening skills.

All is not perfect. I experienced several program crashes related to CD-ROM access, partly due to interface confusion. Sampled instruments are sometimes used in recognition drills and sound little like the real thing (the triangle sounds like a brake drum). And the trivia game references a Wagner "symphony" that is scarcely known (I think they meant "orchestra").

Still, *Piccolo* is excellent in concept, if a little rough around the edges, and a fine way for you or the children to explore the mystery of music.

— Bob Lindstrom

Opcode Interactive 3950 Fabian Way, Suite 100, Palo Alto, CA 94303 (415) 494-1112

♦ ♦ ♦ ♦ ♦ ♦

Macademic

Learning Value:
Interface:
Visuals: N/A
Audio: N/A
Overall:

Macintosh; $149.00

Macademic is without a doubt the largest collection of Macintosh educational software ever assembled. The 248 MB disc contains thousands of programs and files covering a wide range of topics, including art, music, math, science, reading, spelling, religion, foreign languages, health, games, classroom administration, and more.

Most of the files are freeware or shareware. Some programs date from as early as 1986, and there is some duplication of files under different headings. Nonetheless, there are many gems here. No science teacher could fail to be excited by the vast collection of science and health software. There are introductory courses in Sanskrit and Esperanto, eight grading programs, a dozen fractal generators, 16 spelling tutors — the list goes on and on.

But there's one big shortcoming of *Macademic* that may make all this wealth less of a bargain: Quite a few of the programs on the disc aren't compatible with modern Macs that require System 7 (that includes the LC 520 and all Performa, Powerbook, Duo, Centris, and Quadra models). The disk's ReadMe file claims that *Macademic* includes a special section of System 7-savvy programs, but all I found was a blurb for Quantum Leap's System 7 shareware disc, *CD7* (reviewed elsewhere in this issue).

That's not the only problem. Since many of the files are HyperCard stacks, you'll need HyperCard or the HyperCard Player to use them. Neither is included on the disc. If you don't have an older version of HyperCard (version 1.2), you'll have to convert stacks to the current HyperCard 2.1 format if you want to adapt them to your own needs.

Plus, you'll get no real help from *Macademic* when you want to find a file, or even get information on it. There's no browsing application, as in some other collections of this kind; the only index is a text file that you must read in a word processor.

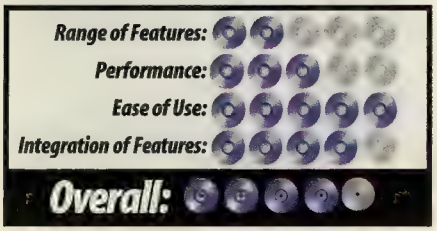
If all that doesn't deter you, then *Macademic* may just be the educational resource you've been seeking. There's certainly enough on the disc to keep any teacher busy for a long time.

— Steven Anzovin

Quantum Leap 2916 Suite B, Ponce de Leon Blvd., Coral Gables, FL 33134 (800) 762-2877

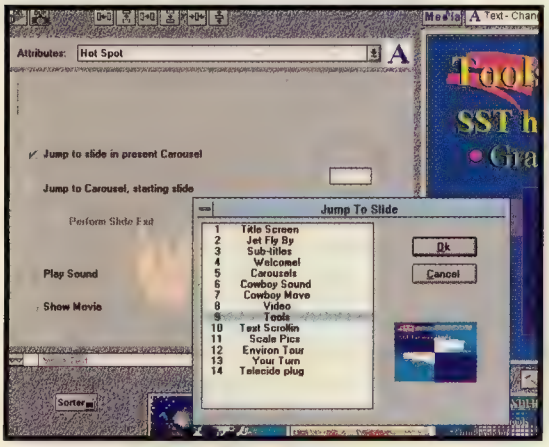
APPLICATIONS

Super Show & Tell 1.1



MPC; $149.00

The latest version of *Super Show & Tell* is a minor upgrade from the original, but the new features include a more powerful Video for Windows movie player, the ability to print selected slides as handouts, and 25 more slide-transition effects. Combined with the power and simplicity that was already a part of *SST*, it adds up to a great tool for fun or education.



What makes *SST* so easy is a user-interface that practically defines simplicity and obviousness, and a simple but effective slideshow model. Unlike the photographic variety, *SST* slides are almost little movie scenes. Slides contain *media objects* (images, geometric shapes, text, sounds, and movies) and *events*, actions assigned to the media objects. Object actions are controlled and synchronized using a simplified timeline called the Action Playlist. They can include playing a Video for Windows clip, moving a picture of a car across the screen, or changing the color of a title.

There's no need to navigate through endless menus or to pop up dozens of sub-windows to create an *SST* presentation. All the controls are integrated into a single editing screen, with large panels showing a preview of the current slide, along with its Action Playlist and the attributes of a selected object. Simple buttons on the same screen add new objects to a slide and new actions to an object.

SST offers the option to make stand-alone presentation disks, floppy-based versions of a show. Since presentation disks play even on systems that don't have *SST* installed, they're great for mailing off multimedia announcements, invitations, or electronic greeting cards.

SST's price is about half that of programs at the next tier of multimedia presentation software. Programs like Asymetrix's *Compel* and Macromedia's *Action!* are oriented toward business professionals rather than home users, and their learning curves are much steeper. But they also have smoother playback engines and better graphic design features, which could make for more persuasive presentations. Each also includes a companion CD-ROM full of sample presentations, clip art, and text fonts. If you want to create the best possible show and you're willing to invest the extra money and start-up effort, you might be better off with a more powerful program than *SST* — with the discounts these programs sometimes carry, the price difference can be surprisingly small.

But *SST* offers a lot for its $149 list price. It can't match the range of media support or the interaction features offered by pricier multimedia presentation packages, but it still delivers plenty of value and it's simple enough for use by kids and computer novices. Ask Me Multimedia Center has enough confidence in *Super Show & Tell* to guarantee it: anyone who can't create a multimedia *SST* presentation within one hour can return the program for a refund. It might not be the most powerful multimedia presentation program on the market, but its low price and gentle learning curve make it ideal for student projects, as well as for ex-kids' recreational projects such as travelogues, scrapbooks, family histories, and electronic greeting cards.

— Tim Victor

Ask Me Multimedia Center 7100 Northland Circle, Suite 401 Minneapolis, MN 5528 (612) 531-0603

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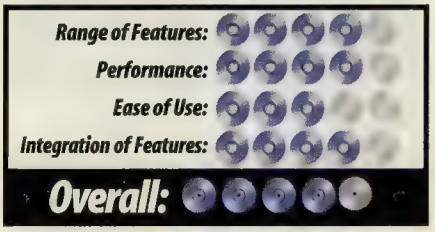
Action 2.5! CD-ROM for Windows



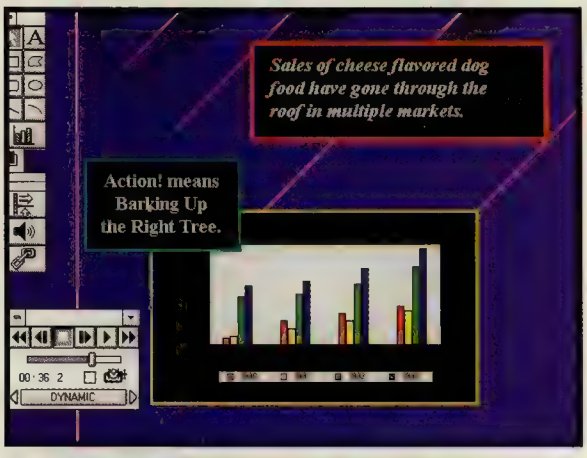
Windows/$399.00
Mac version available

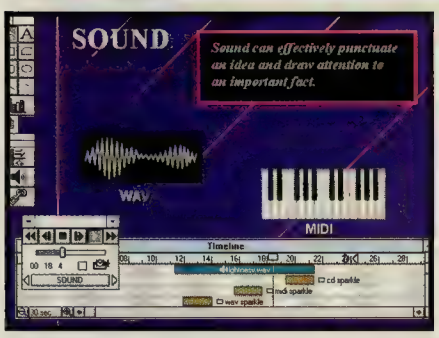
Macromedia's *Action!* desktop presentation software has been lurking in the wings for several years, but only came of multimedia age with the release of Version 2.0 in late 1992.

Action! presentations are built upon theatrical metaphors. A presentation is referred to as an *act*, which is composed of a series of *scenes* to be played out on the screen, or *stage*.

Acting as a digital director, the *Action!* user assembles a cast of characters and choreographs their appearance, position, and movement *on stage*. Each scene is acted out by *objects*, which can be text, graphics primitives drawn with *Action!*'s toolbox, imported graphics,

Action! animated charts, or full-motion video clips. MIDI (.MID), Windows Wave (.WAV), or Red Book audio clips may be linked to objects or played as background music during scenes.





Objects can be manipulated using a variety of canned effects that control how objects enter the stage, and supervise their motion, appearance, and eventual exit. *Action!*'s business-charting module offers easy data entry and an assortment of animated tricks sure to raise the eyebrows of even the most jaundiced button-down audiences.

Action!'s timeline editor provides the key to managing complex scenes; it keeps a time-based summary of objects and their qualities at hand while assembling the individual components of a scene.

If all of this seems rather complex, that's because it is. Users who loathe referring to manuals will rapidly find themselves in deep weeds, in spite of the context sensitive on-line help. In light of *Action!*'s capabilities, it's hard to believe that Macromedia doesn't include a guided tour showing off the program's capabilities. This CD-ROM contains only a single sample presentation that hardly scratches the surface of what *Action!* can do. The package does include a video cassette that provides a nice overview of the product, but doesn't help as much as an on-line hands-on tour would.

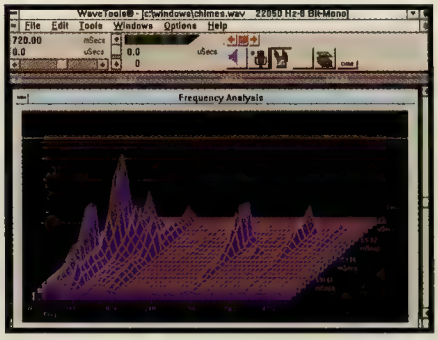
Action!'s manual is logically organized and easy enough to follow, but it's also bewilderingly bereft of detailed tutorial material that could ease the break-in period for new users. Fortunately, there are plenty of pre-rolled scene templates which a new user can use as a framework instead of breaking entirely new ground.

Version 2.5 adds support for full-motion video objects, including Microsoft Video For Windows (.AVI), Apple Quicktime for Windows (.MOV), Autodesk Animator (FLIC), and Intel Indeo formats. A rudimentary editor is included for .AVI files only.

The CD-ROM version of *Action!* 2.5 comes bundled with Turtle Beach's slick *Turtle Tools for Multimedia*. The heart of *Turtle Tools* is WaveTools, a digital waveform recorder and editor that has an intuitive interface which belies the program's power. WaveTools can slice, dice, and julienne your favorite .WAV files in enough different ways to satisfy the most demanding sound-byte buffs. *Turtle Tools* also includes MIDI Tune Up, a program which allows the non-technical user to manipulate MIDI files.

Rounding out the CD-ROM version of version 2.5 is *ClipMedia* 2, a business-oriented collection of royalty-free clip art, sound, and videos that provides a solid base on which to build your own personal multimedia resource library.

Action! is a bit tougher to master



than most of its competition, but the extra effort involved can pay off handsomely.

— Arlan R. Levitan

Macromedia 600 Townsend, San Francisco, CA 94103
(415) 442-0200

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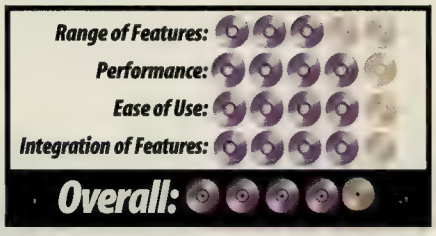
Visual CD



MPC; $69.95

Is *Visual CD* the ultimate CD-ROM manager? If you're an avid reader of this magazine, you've probably piled up a respectable stack of your favorite discs, using Program Manager to organize your CD-ROM titles, a scrapbook utility to keep up with your Photo CDs and clip art, and a CD audio utility like Media Player to deliver your music. It can be tricky to keep up with it all, and worse, you can't always remember to put the right disc in the drive when needed (even if you're lucky enough to have a multi-CD carousel).

Visual CD puts it all together, mimicking the familiar look and feel of Program Manager. Use Program Manager or your favorite shell for your hard-drive based programs, and let *Visual CD* take care of your CD-ROM titles. Simply insert a new disc, and *Visual CD* asks if you'd like to install it. If it's a software

title, it lets you run the installation program, which in turn creates a group filled with icons, just like Program Manager. If the title was already installed, you can easily copy the group from Program Manager into *Visual CD*. The group pops up when the CD is inserted, so running CD-ROM titles is truly plug and play.

If the disc is content-based, the group window displays a thumbnail preview of the art, which works great with Photo CD titles — just double-click on a miniature representation to launch your associated graphic editor, or press the Play button on the toolbar to begin a slideshow.

Another effective use of the VCR-like toolbar (see graphic) is for playing audio CDs. Unlike Media Player, which only lets you play the discs, *Visual CD* lets you enter information into the group's database, so you can pick tracks by name, and search any category. Moreover, *Visual CD* detects when you've inserted the disc and pops up the track list. You can also program and save the playback order to your liking.

Visual CD is ideal for its one-stop organizational capabilities, but it is somewhat redundant if you're already comfortable with Program Manager (or other shells) and tools like Media Player. I couldn't help but wish that its features could be merged with Program Manager or have better desktop support so that *Visual CD* could work as a replacement for Program Manager. *Visual CD* can also use up too many resources if you stock it full of icons — a problem also common with Program Manager. But for what it offers, there's no better tool, so for now (at least until version 2.0), *Visual CD* is indeed the ultimate CD-ROM manager.

— Charles Brannon

Meridian Data 5615 Scotts Valley Dr., Scotts Valley, CA 95066
(408) 438-3100

RESOURCES

CD Blaster

Variety of Content:
Interface:
Usefulness:
Overall:

Windows; $39.95

This CD-ROM grabbag of multimedia bits and pieces was designed to do nothing more than entertain you as you work in Windows. The defining (and highly subjective) test for this product is how well *CD Blaster*'s content amuses or intrigues you.

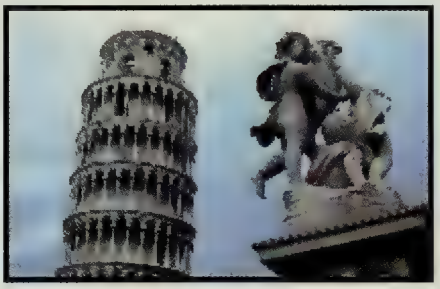
But first things first — what does *CD Blaster* contain? There are 24 utilities of various worth, covering topics as diverse (and often frivolous) as How to Win at Minesweeper, Color Cursors, and Multimedia Screen Saver. Also on board are six "talking" utilities, featuring impressions of celebrity voices (with matching caricatures) and a variety of foreign dialects.

As an example of the latter, let's say you enlist the Talking Calculator utility to perform some intense multiplication. The simple interface takes you to the MediaScape Changer, where you select the voice and/or caricature from a short list of famous personalities. Then, by accessing the Talking Calculator, your chosen celebrity's cartoon image will pop up and give voice to whatever numbers and functions you're entering on the calculator.

There's a whole batch of these yakkety-yak functions, and their effect can be entertaining, at least initially. Granted, there's no reason why anyone *needs* a calculator that talks like H. Ross Perot. But that's not the point — the idea is that using *CD Blaster* will pump fun into your life.

The impressions themselves are a mixed lot, ranging from the easily imitated George Bush to the standard Ah-nold Schwarzenegger. The Homer Simpson sound-alike captures the essence of its lumpy character, while his wife fares less well (her gravelly honk sounds more like someone with strep throat). The foreign voices sound...well, foreign.

The ornamental photos used as multimedia screen savers are attractive and varied, and perhaps the best part of *CD Blaster*. Most of these shots are travel-based (pics of the Eiffel Tower, New York



at night, Egyptian sand dunes, etc).

Some 170 short videos are also included, and what an odd bunch they are. Sure, there's the standard fare: sunrises, fireworks, and cuddly animals. None of this, however, prepares you for the quirky clips showing a mass of cockroaches, a man juggling a child, and ribs barbequing over open flame.

Multimedia Jukebox contains the program's absolute dregs. The music clips purport to play the sweet strains of classical favorites, such as Mozart's "Nachtmusik" and Tchaikovsky's "Nutcracker." What you actually get are terribly depressing samples of dragging organ music, not unlike what you'd hear in "Dark Shadows." Worse yet, the program seems to stick when changing selections, sometimes giving you Mozart when you've chosen Tchaikovsky.

OK, the real question: Is *CD Blaster* worth the suggested retail price of $39.95? I think that's a bit much, considering *CD Blaster* is comprised of largely trivial pursuits. Then again, some of this stuff *is* amusing.

— Phill Powell

Aristo-Soft 7041 Koll Center, Pleasanton, CA 94566
(510) 426-5355

CD7: Quantum Leap

Variety of Content:
Interface:
Usefulness:
Overall:

Mac; $149.00

Most Mac enthusiasts have spent at least some time exploring the vast universe of shareware and public-domain software currently offered through hundreds of BBS's around the country. But downloading programs from your local BBS can often become a big pain in the modem. Wouldn't it be nice to have instant access to a giant collection of software, all organized in neat little folders? The folks at Quantum Leap thought so. They've recently released *CD7*, a 500-megabyte potpourri of 9000 programs and resources designed to enhance your

System 7 computing experience.

When you first open this CD-ROM, you're presented with a main window displaying an array of folders. Each folder contains a collection of related sub-folders. The sub-folders typically include a shareware or freeware program and its accompanying files. Some sub-folders contain collections of plug-in modules for other programs. The ScreenSavers folder, for instance, offers more than 60 *After Dark* modules, several modules for *Pyro*, and over three dozen plug-ins for *DarkSide*. The QuickTime folder includes QuickTime 1.6, a number of related programs and more than four dozen movies of varying quality.

The main focus of *CD7*, however, is not on fun stuff. This disc is targeted primarily at experienced Mac users seeking to expand their productivity and to extend the capabilities of System 7. Programmers will want to check out the Developers folder. Business people and desktop publishers each have folders aimed at them. There's even a separate Font folder with hundreds of Postscript, TrueType, and Screen fonts along with several font-related utilities.

If you import and export files on a regular basis, you'll want to look into the Communication folder, the Compression folder, and the Virus Utilities folder. For customizing the look and feel of System 7, there's a System 7 Icon folder with a copy of ResEdit and a plethora of colorful ready-to-paste icons and 3D folders.

Although you won't find any sound effects, clip art, or digitized photos on the *CD7* disc, there are still many items that will intrigue the average Mac user. The HyperCard folder with its hundreds of HyperCard stacks is one example. Other folders include: Applications, Desk Accessories, Control Panels, Extensions, Utilities, and Updates. You'll also find complete versions of System 7.0 and 7.0.1, and three versions of System 6.

To help you locate specific topics and titles, *CD7* provides a main directory and separate sub-directories in *MacWrite II* and *Microsoft Word* formats. You can print these out (the main directory runs about 70 pages) or use your word processor's Search function to find titles or strings of text.

All in all, *CD7* makes it easy to dive in and explore the world of shareware and public-domain software. And Quantum Leap even offers technical support.

— David M. Rubin

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Tom R. Halfhill

A New Balance of Power

For a decade, it's been easy to compare PC compatibles and Macintoshes: PCs were clunky and hard to use, but were affordable and expandable. Macs were well-integrated and easy to use, but were expensive and more difficult to expand.

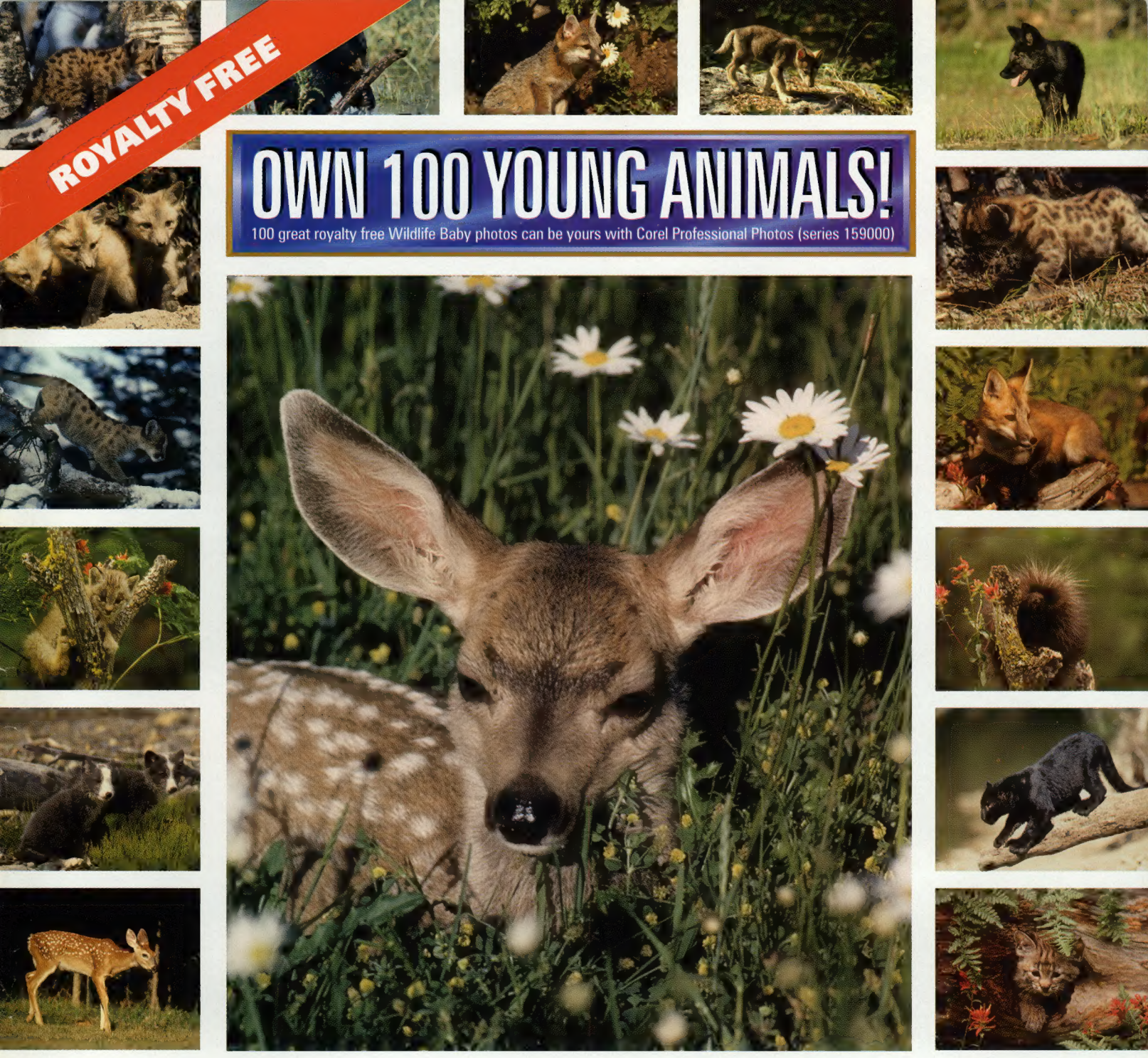
Now Apple has a new line of Macs and a new advertising slogan: "It does more. It costs less. It's that simple." But is it *really* that simple? To find out, I decided to compare street prices for a versatile multimedia system on each platform. Both platforms have been transformed in recent years. Windows 3.1 poses a serious challenge to the Mac's graphical user interface, and the closed Macs with tiny screens are all but gone, replaced by more affordable, expandable models. Picking a Mac for my comparison was easy. The Quadra 660AV — and its big brother, the Quadra 840AV — are Apple's premier multimedia machines. Both have impressive built-in features, including CD-quality sound input/output, full-motion video digitizers, PlainTalk speech recognition, text-to-speech conversion, a new GeoPort interface for telephony applications, and a DSP (digital signal processor) that vastly improves audio/video processing.

Apple has a new advertising slogan for the Mac: "It does more. It costs less. It's that simple." Is it really that simple? To find out, I decided to compare street prices for a versatile multimedia system on each platform.

Picking a comparable PC was more difficult: There isn't one. At least, not off the shelf. Of course, the traditional advantage of PCs is that you can build the computer you want by adding boards and peripherals. But I soon discovered it's nearly impossible to exactly duplicate the Quadra 660AV, so an apples-to-oranges comparison is inevitable. A Quadra 660AV with 8 MB of memory, a 230-MB hard drive, and a double-speed CD-ROM costs about $2600 with keyboard. Add $100 for powered speakers and $20 for an Apple microphone. I excluded monitors and printers from my comparison because those prices are the same. For the PC, I started with an inexpensive clone, the Leading Edge 486DX-33. The CPU is a tad faster than the 660AV's 25-MHz 68040, but the Mac still has an edge with its DSP. Equipped with 8 MB of RAM and a 260-MB hard drive, the Leading Edge costs about $1550.

After looking at lots of sound boards, SCSI cards, and CD-ROM drives, I settled on Media Vision's Fusion DoubleCD 16, a handy kit that includes a Pro AudioSpectrum 16 (CD-quality sound recording and playback), a SCSI interface, an NEC 55J double-speed CD-ROM drive, and Labtech CS550 powered speakers. Price: about $530. To this, I added Media Vision's Pro Audio PowerPak, a $65 package with a microphone and voice-recognition software. I couldn't find a video board that exactly matched the Quadra 660AV's video capabilities, even after visiting three computer superstores in Silicon Valley. The 660AV can display and capture full-motion video in NTSC, PAL, or SECAM formats through its composite and S-video ports, and also can *output* the video to TVs and VCRs in NTSC or PAL. Most video digitizers for PCs support input, not output, and very few support PAL and SECAM.

Finally I settled on the Cardinal SNAPplus, a $700 board that supports video input and output -- NTSC only. Add another $135 for Microsoft's Video for Windows. (The Mac comes with QuickTime.) Total for the Quadra 660AV: $2720. Total for the PC: $2980. There are a few differences I didn't consider. The Mac has built-in Ethernet and LocalTalk networking; similar capabilities for the PC would require an Ethernet card (about $80) and Windows for Workgroups ($50 upgrade). PC users would also need a board to duplicate the 660AV's advanced DSP and telephony functions. Mac users would need a board to match the SNAPplus's 24-bit Super VGA graphics. But the bottom line is clear: PCs no longer enjoy a price/performance advantage. The old rules don't apply any more.



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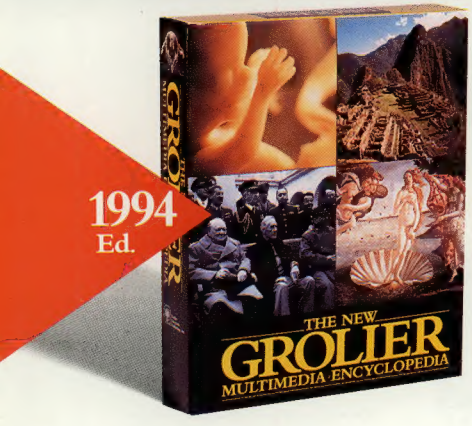

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